PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

TRADE MARK

Announcement

We take pleasure in announcing that the Lagerloef Trading Co., Inc., which was originally organized as the Lagerloef Trading Company and shortly thereafter incorporated, will be twenty years old on January 1, 1938.

The Lagerloef Trading Co., Inc., as advised in its announcement of November 1, 1937, has reached conclusions with its Finnish friends effective on the dates specified.

Commencing December 1, 1937 the Lagerloef Trading Co., Inc., will be equipped to execute buying and/or selling orders in all grades of wood pulp, and earnestly solicits your patronage.

The Lagerloef Trading Co., Inc., will retain its main offices at 52 Vanderbilt Avenue, New York City, as well as continuing to maintain a representative in Kalamazoo, Michigan.

The corporation will, as heretofore, be guided in its efforts by Mr. Hans Lagerloef, who takes this opportunity of assuring that the careful and prompt service which the corporation has always endeavored to render these many years will be fully maintained.

The corporation cordially invites you to consult with it for the purpose of discussing present and future market conditions.

Lagerloef Trading Co., Inc.
Hans Lagerloef, President

December 1, 1937

DEC. 9 1937

Vol. CV
No. 24

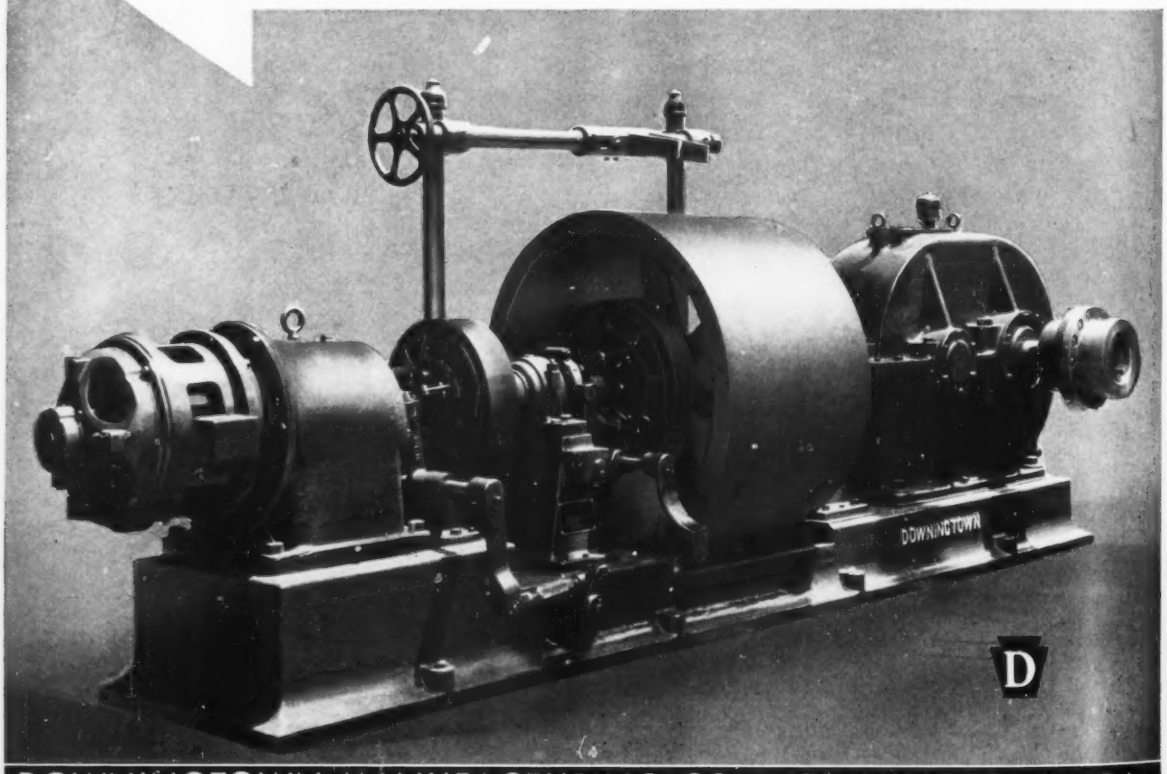
LIBRARY
UNIVERSITY OF WASHINGTON
SEATTLE

DOWNINGTOWN

Modern Motorized Reversing Mechanism
Totally enclosed double reduction spiral bevel gear unit—Continuous splash lubrication system—Gears and shafts heat-treated
All shafts operate in anti-friction bearings.

REVERSING CALENDER DRIVE

Quiet, Cool Running Unit—96% to 98% Efficient
Modern construction is insurance against breakdowns, losses in production and excessive maintenance charges—This is only one unit in our complete line of modern floor drives.



DOWNINGTOWN MANUFACTURING CO., DOWNINGTOWN, PA.

Entered as second class matter at the Post Office at East Stroudsburg, Pa., under the Act of Congress of March 3, 1879. Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., East Stroudsburg, Pa. Executive and Editorial office: 15 W. 47th St., New York, N. Y. Domestic subscription U. S. and possessions, $4.00 per year.

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

Executive and Editorial Offices: 15 West 47th Street, N. Y. C.
Western Rep.—H. K. Vinton, 123 W. Madison St., Chicago, Ill.

The Contents of this Publication are Copyrighted

TABLE OF CONTENTS

Chemical Exposition Opens Large Display .. 15
Joint Printing Committee Makes Awards ... 16
German Pulp Commission Visits Canada 18
Head of C. V. Meppel Co. Visits Boston 19
Henry D. Schmidt Heads Paperboard Men .. 19
N.P.T.A. to Have Room Exhibit 19
Stable Prices Buoy Up Quiet Paper Trade .. 20
Discontinues New Haven Branch 20
Paper Mills Denied Lower Freight on Coal .. 21
Shipping Dilts Hydrafiners to Crossett 21
Higher Newsprint Costs Expected in 1938 .. 22
Obituary 23
Lectures at Paper Study Course 33
Editorial **34**
Election Directed at Luke, Md. 35
Production Ratio Report 35
So. Kraft Buys Rockford Plant 35
Technical Section
Review of the Paper Industry Literature 37
Sulphate Pulping of Longleaf Pine. Effect of Chemical Wood Ratio on Yield and Quality of Pulp 39
TAPPI Notes 44
F. L. Simons Joins George La Monte & Son 44
Construction News 45
Fulton Systems for Puget Sound 46
Explosion Kills Man at Waterville 46
Western Pulp Co. to Build Mill 46
Financial News of Pulp and Paper Industry 47
Government Paper Bids 48
Indianapolis Demand Declines 48
Fine Paper Division Has Luncheon 48
Micromax Temperature Instruments 48
Harry P. Gould Recuperating 48
Imports of Paper and Paper Stock 49
New York Market Review **52**
Miscellaneous Markets **54**
Market Quotations **56**

The PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Copyright, 1937, by the Lockwood Trade Journal Co., Inc.

What INSUROK has to do with PAPER MILL PROFITS

INSUROK gears and bearings outwear metal; eliminate lubrication problems; reduce the bedlam of noise; minimize shut-downs and replacements.

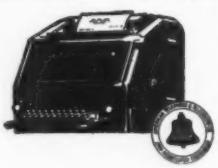
Perhaps nowhere else in industry are the advantages of INSUROK Plastic Gears and Bearings so firmly established as in the paper mill—with such a direct bearing on profits. Installed at strategic points, they largely eliminate shut-downs, with resulting increase of production and lowering of costs. Resilient, INSUROK Bearings stand up for years under crushing loads and entirely overcome the disadvantages of oil lubrication. Silent, INSUROK Gears reduce noise and step up plant efficiency. Full details, covering the wide variety of uses for INSUROK in the paper mill, sent on request, along with copy of INSUROK Handbook.

The RICHARDSON COMPANY

Melrose Park, (Chicago) Ill. Founded 1858 Lockland, (Cincinnati) Ohio
New Brunswick, N. J. Indianapolis, Ind.
FORMERLY, The RICHARDSON PAPER COMPANY
Detroit Office: 4-252 G. M. Building, Phone Madison 9386
New York Office: 75 West Street, Phone Whitehall 4-4487

UNDER a blazing sun, a sturdy tractor pulls a reaper that harvests the rich, yellow grain. Only a few months ago, this same tractor rolled out of International Harvester's tractor works . . . an example of efficiency and well-ordered manufacture.

When this company wanted a swifter, surer means of communication between general offices in Chicago, the Chicago works, the tractor factories at Rock Island, Ill., and Milwaukee, Wis., and the motor truck works at Springfield, O., and Fort Wayne, Ind., they asked Bell System representatives to help. Their joint study indicated all points should be connected by Private Line Teletypewriter Service. This was done.



Now, "teletypewritten" instructions form the basis of manufacture and management. Typing-by-wire facilitates the handling of matters requiring fast, typewritten communication — rush orders, changes, tracers, production and shipping information. International Harvester reaps the benefits in savings and in better customer service.

If your business has a communications problem, it, too, might be solved profitably with the help of Bell System representatives. They will be glad to talk it over. Call your local telephone office. There's no obligation.

PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

SIXTY-SIXTH YEAR

PAPER

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with Paper Trade Journal.

Vol. CV, No. 24 Thursday, December 9, 1937

PAPER

Established Sept. 21, 1918
Consolidated Feb. 19, 1925
with Paper Trade Journal.

Chemical Exposition Opens Large Display

Over 300 Exhibitors Show Their Products on Three Floors at Grand Central Palace, New York, December 6-11 — Notable Progress Made By Chemical Industries and In Scientific Equipment By Leading Makers.

The sixteenth Exposition of Chemical Industries opened December 6 at the Grand Central Palace, New York, in the most impressive show of its kind ever held in this city. The exhibits and demonstrations of raw materials, processes and machinery presented by leading manufacturers, is a notable one. The many scientific advancements shown on every hand demonstrates how much all industry depends upon chemistry and chemical engineering for its progress. Of particular interest to the paper industry are the following exhibits:

Allis-Chalmers Manufacturing Co.

A demonstration of the crushing, feeding, screening and conveying of materials by the new "Utah" principle in feeder, screen and conveyor, is one of the features at the main floor booth of the Allis-Chalmers Manufacturing Co., Milwaukee, Wis. A small tank rectifier with grid-voltage control, a low head gyratory sifter in operation and an experimental laboratory roller mill are also shown. Included among other operating exhibits is the Texrope vari-pitch drive, Seal-Clad motor, rotary air compressor and a gear motor, motor starters and pump. Other products include a new design of rubber-lined pump and an explosion proof motor.

American Machine & Metals, Inc.

The exhibit of the Tolhurst Centrifugal Division, American Machine & Metals, Inc., New York, on the main floor features the Tolhurst Suspended Centrifugal for the process industries. It is employed to filter a solid from a suspension; to drain a solid by removal of adhering liquid; to dehydrate a solid by displacement of water or other liquid by a miscible solvent; to clarify a liquid by throwing finely divided solids out of suspension; to thicken a suspension by a partial removal of liquid; to separate a mixture of two or more solids, or an unfilterable, gelatinous material from a liquid, and to separate two or more solids suspended in a liquid. Vibration is controlled by the Aperiodic Mounting and the baskets are made of steel, bronze, monel metal, copper, stainless steel, nickel alloys, etc., with or without perforations. The Center-Slung is a large size centrifugal designed for batch processes. Self-Balancing and Suspended types of centrifugals for use in the laboratory in experimental work and for preparing sample batches are also shown.

Bailey Meter Co.

The "Bailey Synchro-Meter" is one of the principal exhibits at the booth of the Bailey Meter Company, Cleveland, Ohio, on the second floor. This instrument is an electrical transmission system for indicating, recording, and integrating flow, pressure, temperature, liquid level, draft and other factors, at distant points. A cut-away section of the Bailey diaphragm-operated draft gauge is also shown. Other items in the company's exhibit include boiler meters, fluid meters, process control and automatic combustion control instruments.

Bausch & Lomb Optical Co.

A general line of the company's optical instruments is displayed at the booth of the Bausch & Lomb Optical Company, Rochester, N. Y., on the third floor. Among the instruments are microscopes, photo micrographic equipment, a spectrograph, and a colorimeter for measuring the depth of color in dyes, etc. in solutions. The Bausch & Lomb Fiber Projector is also shown, which instrument projects a magnified picture of fibers on a screen for their accurate study and measurement.

Bird Machine Co.

Two types of filters comprise the principle feature at the exhibit of the Bird Machine Company, South Walpole, Mass., on the third floor. The Bird Continuous Centrifugal Filter has been developed for the continuous separation of crystalline or granular solids from liquids. The Bird Continuous Solid Bowl Centrifugal, is used for the separation of fine or unfilterable solids, such as pigments, or classification of the solids according to the size of the particles of the material.

The Bristol Co.

Bristol's System of Coordinated Process Control is a feature at the exhibit of The Bristol Company, Waterbury, Conn., on the main floor. This system consists of a multiple cam cycle controller or "mechanical brain", which controls by compressed air

(Continued on page 25)

Joint Printing Committee Makes Awards

Announces Concerns Which Will Supply the Government Printing Office With Numerous Varieties of Paper for the Six Months Period Beginning January 1, 1938 — Awards Made to Low Bidders Except In Two Cases.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 8, 1937.—Awards were made on Monday by the Joint Congressional Committee on Printing for paper for the use of the Government Printing Office for a six months period beginning January 1 next. Bids were opened on November 29.

In all but two cases awards were made to the low bidder. On eight lots there was only one bid. One hundred and thirty items had low bids and there were 25 items having tie bids. In cases where there were tie bids lots were drawn from a hat. There were no bids on five lots.

The following awards were announced on Monday:

No. 1, National Pulp & Paper Co., Inc., 200 tons at 2.5 cents per pound and balance to Paper Corp. of U. S., 3 cents.
No. 3, James F. Walsh Paper Corp., 6.18 cents.
No. 4, John F. Post, Inc., 6.24 cents.
No. 5, James F. Walsh Paper Corp., 6.18 cents.
No 6, James F. Walsh Paper Corp., 5.80 cents.
No. 7, James F. Walsh Paper Corp., 5.80 cents.
No. 8, James F. Walsh Paper Corp., 5.80 cents.
No. 9, Paper Corp. of U. S., 5.86 cents.
No. 10, James F. Walsh Paper Corp., 5.79 cents.
No 11, Graham Paper Co., 5.95 cents.
No. 12, Paper Corp. of U. S., 5.67 cents.
No. 13, R. P. Andrews Paper Co., 5.67 cents.
No. 14, Stanford Paper Co., 7.09 cents for 70 pound and 6.46 cents for 100 pound.
No. 15, R. P. Andrews Paper Co., 5.91 cents.
No. 16, James F. Walsh Paper Corp., 6.24 cents.
No. 17, Barton, Duer & Koch Paper Co., 5.91 cents.
No. 18, R. P. Andrews Paper Co., 6.81 cents.
No. 19, Whitaker Paper Co., 14.27 cents.
No. 20, Aetna Paper Co., 8.934 cents.
No. 21, Aetna Paper Co., 8.034 cents.
No. 22, Aetna Paper Co., 8.734 cents.
No. 23, Aetna Paper Co., 11.234 cents.
No. 24, R. P. Andrews Paper Co., 16.37 cents.
No. 25, R. P. Andrews Paper Co., 16.37 cents.
No. 27, R. P. Andrews Paper Co., 6.21 cents.
No. 28, Whitaker Paper Co., 5.85 cents.
No. 29, R. P. Andrews Paper Co., 5.57 cents:
No. 30, Marquette Paper Co., 5.57 cents.
No. 34, Paper Corp. of U. S., 6.40 cents.
No. 35, John F. Post, Inc., 7.37 cents.
No. 36, James F. Walsh Paper Corp., 9.60 cents.
No. 37, Old Dominion Paper Co., 14.46 cents.
No. 40, Aetna Paper Co., 9.134 cents.
No. 43, Stanford Paper Co., 6.15 cents.
No. 44, Stanford Paper Co., 7.12 cents.
No. 47, Aetna Paper Co., 6.434 cents.
No. 51, R. P. Andrews Paper Co., 10.23 cents.
No. 52, R. P. Andrews Paper Co., 9.55 cents (white); 10.15 cents (blue).
No. 53, Stanford Paper Co., 12.00 cents.
No. 55, Paper Corp. of U. S., 6.20 cents.
No. 56, Old Dominion Paper Co., 6.1349 cents.
No 57, Butler Paper Co., 6.69 cents.
No. 58, Marquette Paper Co., 5.80 cents.
No. 59, Marquette Paper Co., 5.80 cents.
No. 60, Barton, Duer & Koch Paper Co., 8.39 cents.
No. 61, Aetna Paper Co., 6.634 cents.
No. 63, Old Dominion Paper Co., 21.169 cents.
No. 64, No bids.
No. 65, Barton, Duer & Koch Paper Co., 11.57 cents.
No. 66, Barton, Duer & Koch Paper Co., 13.47 cents.
No. 67, Barton, Duer & Koch Paper Co., 13.47 cents.
No. 69, Barton, Duer & Koch Paper Co., 18.82 cents.
No. 70, Old Dominion Paper Co., 7.489 cents.
No. 71, Old Dominion Paper Co., 8.488 cents.
No. 73, Marquette Paper Co., 18.45 cents.
No. 74, Lee Paper Co., 13.07 cents.
No. 75, Marquette Paper Co., 20.00 cents.
No. 76, Lee Paper Co., 13.77 cents.
No. 78, R. P. Andrews Paper Co., 31.00 cents.
No. 79, Lee Paper Co., 25.72 cents.
No. 83, Barton, Duer & Koch Paper Co., 16.88 cents.
No. 102, Marquette Paper Co., 6.15 cents.
No. 109, Aetna Paper Co., 10.234 cents.
No. 110, Aetna Paper Co., 8.434 cents.
No. 111, Aetna Paper Co., 7.874 cents.
No. 112, Aetna Paper Co., 8.174 cents.
No. 113, Aetna Paper Co., 8.334 cents.
No. 114, Aetna Paper Co., 10.734 cents.
No. 115, Aetna Paper Co., 8.874 cents.
No. 116, Aetna Paper Co., 8.334 cents.
No. 117, Aetna Paper Co., 8.94 cents.
No. 120, Aetna Paper Co., 12.434 cents.
No. 121, Aetna Paper Co., 9.834 cents.
No. 122, Aetna Paper Co., 10.034 cents.
No. 123, Aetna Paper Co., 10.734 cents.
No. 125, Old Dominion Paper Co., 20.909 cents.
No. 126, Old Dominion Paper Co., 17.409 cents.
No. 128, Old Dominion Paper Co., 20.959 cents.
No. 129, Old Dominion Paper Co., 20.959 cents.
No. 140, Old Dominion Paper Co., 26.889 cents.
No. 141, Old Dominion Paper Co., 20.959 cents.
No. 151, Stanford Paper Co., 6.90 cents.
No. 152, Stanford Paper Co., 6.90 cents.
No. 154, Aetna Paper Co., 9.274 cents.
No. 155, Aetna Paper Co., 9.774 cents.
No. 156, Aetna Paper Co., 9.774 cents.
No. 157, Aetna Paper Co., 10.274 cents.
No. 160, Aetna Paper Co., 10.374 cents.
No. 161, Aetna Paper Co., 10.374 cents.
No. 162, Whiting Paper Co., 10.79 cents.
No. 163, Aetna Paper Co., 10.374 cents.
No. 164, Aetna Paper Co., 10.674 cents.
No. 165, Aetna Paper Co., 10.674 cents.

No. 168, Barton, Duer & Koch Paper Co., 14.47 cents.
No. 169, Barton, Duer & Koch Paper Co., 14.47
No. 170, Barton, Duer & Koch Paper Co., 14.47 cents.
No. 171, Barton, Duer & Koch Paper Co., 14.47 cents.
No. 172, Barton, Duer & Koch Paper Co., 15.23 cents.
No. 173, Barton, Duer & Koch Paper Co., 15.23 cents.
No. 176, Barton, Duer & Koch Paper Co., 19.78 cents.
No. 177, Barton, Duer & Koch Paper Co., 19.78 cents.
No. 178, Barton, Duer & Koch Paper Co., 19.78 cents.
No. 179, Barton, Duer & Koch Paper Co., 19.78 cents.
No. 180, Barton, Duer & Koch Paper Co., 19.78 cents.
No. 181, Barton, Duer & Koch Paper Co., 19.78 cents.
No. 184, Virginia Paper Co., 6.60 cents.
No. 190, Aetna Paper Co., 9.634 cents.
No. 191, Walker, Goulard Plehn Co., 12.64 cents.
No. 192, Aetna Paper Co., 9.634 cents.
No. 193, Walker, Goulard Plehn Co., 12.88 cents.
No. 196, Barton, Duer & Koch Paper Co., 19.75 cents.
No. 197, Mathers-Lamm Paper Co., 12.75 cents.
No. 198, No bids.
No. 201, John F. Post, Inc., 7.37 cents.
No. 202, R. P. Andrews Paper Co., 8.17 cents.
No. 203, Stanford Paper Co., 10.25 cents.
No. 204 Graham Paper Co., 10.16 cents.
No. 205, Lee Paper Co., 11.55 cents.
No. 209, Barton, Duer & Koch Paper Co., 4.40 cents.
No. 210, Barton, Duer & Koch Paper Co., 4.00 cents.
No. 211, Barton, Duer & Koch Paper Co., 5.75 cents.
No. 213, Rejected.
No. 214, Rejected.
No. 215, Barton, Duer & Koch Paper Co., 8.00 cents (Minimum order 10,000 pounds).
No. 217, R. P. Andrews Paper Co., 4.42 cents.
No. 218, R. P. Andrews Paper Co., 4.42 cents.
No. 219, R. P. Andrews Paper Co., 4.18 cents.
No. 220, No bids received.
No. 251, R. P. Andrews Paper Co., 9.75 cents.
No. 252, Andrews Paper House of York, Pa., $5.30 per 1,000 sheets.
No. 254, Graham Paper Co., 5.45 cents.
No. 255, Cauthorne Paper Co., 5.83 cents.
No. 256, Whitaker Paper Co., 6.89 cents.
No. 257, Whitaker Paper Co., 7.00 cents.
No. 258, Graham Paper Co., 5.47 cents.
No. 259, Graham Paper Co., 5.61 cents.
No. 260, L. Hyman & Sons, 7.78 cents.
No. 261, L. Hyman & Sons, 8.69 cents.
No. 262, Link Paper Co., 10.50 cents.
No. 263, Barton, Duer & Koch Paper Co., 7.00 cents.
No. 264, Andrews Paper House of York, Pa., 3.15625 cents.
No. 265, Whitaker Paper Co., 8.57 cents (minimum order 10,000 pounds) and 8.82 cents.
No. 271, Old Dominion Paper Co., 5.599 cents.
No. 276, Rejected.
No. 277, Rejected.
No. 280, Barton, Duer & Koch Paper Co., 8.10 cents.
No. 281, No bids received.
No. 302, Stanford Paper Co., $22.49 (Minimum order 70,000 sheets) per 1,000 sheets and $24.15.
No. 303, Stanford Paper Co., $34.60 per 1,000 sheets.
No. 304, R. P. Andrews Paper Co., $46.66 per 1,000 sheets.
No. 305, Barton, Duer & Koch Paper Co., $29.90 per 1,000 sheets.
No. 306, Barton, Duer & Koch Paper Co., 4.65 cents.
No. 307, Barton, Duer & Koch Paper Co., 4.65 cents.
No. 308, Barton, Duer & Koch Paper Co., 4.65 cents.
No. 309, Barton, Duer & Koch Paper Co., 4.65 cents.
No. 310, Barton, Duer & Koch Paper Co., 4.65 cents.
No. 325, R. P. Andrews Paper Co., 3,000,000 pounds at 5.37 cents and Whitaker Paper Co., 3,000,000 pounds at 5.40 cents.
No. 351, Barton, Duer & Koch Paper Co., $6.53 per 100 sheets.
No. 352, Whitaker Paper Co., $10.38 per 100 sheets.
No. 360, Andrews Paper House of York, Pa., 1.80 cents.
No. 361, Container Corp. of America, 1,615 cents (not to exceed 600,000 pounds)
No. 362, Mathers-Lamm Paper Co., 4.744 cents.
No. 363, No bids received.
No. 364, Barton, Duer & Koch Paper Co., 2.20 cents.
No. 365, Virginia Paper Co., 2.158 cents.
No. 366, Mathers-Lamm Paper Co., 3.48 cents.
No. 367, Mathers-Lamm Paper Co., .48 cents.
No. 368, Barton, Duer & Koch Paper Co., 5.20 cents.

Sam Shryock on Air Tour

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 6, 1937.—Our own Sam Shryock, secretary-treasurer of Shryock Brothers, will board the Panama Clipper ship tomorrow at Camden airport for Washington where he will embark on the Eastern Airways to Miami and then on to San Juan, Puerto Rico, thence to Trinidad, Port of Spain, making two minor stops at Belem and Recife, Brazil, arriving in Rio De Janeiro on Sunday where he will spread five days. He will then take off for Buenos Aires, and after a 5-day stay in Buenos Aires he plans to fly to Santiago via the Andes mountains, visiting Lima, Peru for another 5 days, stopping at Cristobal, after which he will fly to Havana, on to Miami and back home in Philadelphia on December 30th.

German Pulp Commission Visits Canada

Report That Reich Government Will Purchase Anticosti Island Denied By Visitors — Object Is to Examine Timber As Source of Raw Material — Marketing Policy of International Paper Co. Held Constructive.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 6, 1937.—Something of a minor sensation was created here this week by the report that a German commission was in Montreal negotiating with the Consolidated Paper Corporation for the purchase of the Island of Anticosti, in the Gulf of St. Lawrence. This island, which formerly belonged to the French chocolate magnate, Henri Menier, is 135 miles long by 35 miles wide and has an area of 3,200 miles. It is densely forested largely with a rather superior type of conifer, well suited for the manufacture of pulp, and is estimated to contain 15,000,000 cords of pulpwood. Under the Menier regime large quantities of rossed pulpwood were exported to American mills. Subsequently the island was purchased by the Wayagamads Paper Company, which later was taken over by the Consolidated Paper Corporation.

German Expert Explains Purpose of Visit

It has turned out, however, that while it is true a German commission is negotiating with the Consolidated Paper Company, it is with a view to purchasing pulpwood and pulp, there being no thought of purchasing the island. The commission consisted of forestry and harbor experts. In a statement given to the press, Dr. Heinrich Woollert, the head of the commission, said the purpose of the commission was to study forest products and transportation facilities. The group was proceeding first to Anticosti because of the early freeze-up there, but might spend nearly two months in Canada before they conclude their survey. Dr. Woollert admitted having seen a local financier, who, it is said, holds the option on the property, but not with a view to purchase.

"We have no obligation to purchase any property," he said, "and we are undecided as to whether it is desirable or not. It might be preferable to purchase cellulose products.

"We also hope to visit some of your larger pulp and paper mills.

"There are other commissions sent from Germany for the same purpose to study conditions in other countries, and other countries in turn send commissions to Germany to make similar studies of various industries for the mutual benefit of each other.

"As the season is well advanced we have decided it is preferable to visit Anticosti first. In visiting your country we are merely seeking information, without obligation to purchase, especially the whole of Anticosti Island. However, as a result of our studies it may be found desirable to purchase wood or pulp from Anticosti or elsewhere."

Commission Represents Private Interests

Dr. Wollert explained that the government of the Reich owns no timber mills and stated that his commission represented only private enterprises in Germany and The Netherlands. The information his party acquired would be pooled among European lumbermen. Purchase of Scandinavian lumber, he said, was becoming increasingly difficult, as Finland had prohibited, under its forest conservation program, the export of more than the natural increase. Thus Germany and Holland must begin to look elsewhere. The Reich, he said, was pushing forest conservation, and he suggested a visit from Canada to study their methods, which were quite advanced.

The question of whether Germany would pay in cash or goods for any Canadian lumber which might be purchased, he said, did not arise. His commission had nothing to do with the financial end of it, they were just experts. The harbor expert of the party, for instance, was not brought along to consider building a port at Anticosti but for advice on the cheapest method of getting the lumber to Germany.

West Coast Lumber Not Available

He explained that purchase by the Reich of West Coast lumber was prohibitive, due to the high cost of transport to Germany; hence the stress on the At-Atlantic seaboard.

"This would be the first time," explained Dr. Woollert, who was accompanied for the interview by Frederick Kreide, "that Europe might buy lumber in America. We Germans like to do things thoroughly, and hence the experts. We want to know just what it would cost us if your lumber proved satisfactory, and when we make our report on our return we have to know everything there is to know about it."

Dr. Woollert added that there was no intention of building a sulphite mill, stating that if sulphite were required it would be purchased from Canadian manufacturers.

Marketing Policy for Newsprint

Trade circles here are inclined to regard as a constructive development the announcement by the International Paper Company, followed by other Canadian producers, that the $50 price for newsprint, set early this year on contracts for the first half of 1938, would prevail for the whole of next year. The fact that the $50 price for the second half of 1938 coincides with that set by the Great Northern Paper Company when it fixed $48 per ton for the first half is also regarded as significant.

Up until recently it was clearly understood that a higher price than the $50 a ton set for the first half would be fixed for the second 6 months of next year. It is now assumed that International Paper, in fixing the $50 a ton price for all of 1938, did not do so from any considerations of "justice" or "equity" but in the interests of its own operations and those of the industry as a whole in the light of the obscure outlook for business, and consequently newsprint consumption, during the incoming year.

The opinion prevails that with a good operating capacity, which now appears quite likely, newsprint operators seem assured of adequate profits on the $50

a ton price for 1938. Though of course the point is not overlooked that costs continue to rise.

Opinions of Other Leading Producers

Following International Paper's announcement three other leading producers, namely Consolidated Paper, Price Brothers & Co., and Abitibi Power and Paper, have announced that their price policy for 1938 would be identical with International's. Their statements folow:

L. J. Belnap, president, Consolidated Paper Corporation:

"I feel that the action taken by International Paper is constructive and stabilizing, and the Consolidated Paper Corporation is in sympathy with it as a means of sharing our customers' difficulties, even though this creates a difficult position for us, because we do not yet know the extent of our cost increases in 1938. We do know, however, that rail freight charges, as well as some production costs, will be higher than anticipated. In making our price $50 for the whole year we are thus doing our best to give consideration to the situation of our customers."

G. T. Clarkson, receiver and manager, Abitibi Power and Paper: "In order to assist its customers to meet the conditions brought about by the recession in business in the United States, Abitibi will, notwithstanding prospective increases in costs of manufacture and delivery, accept $50 price for newsprint delivered by it in the last six months of 1938."

C. H. L. Jones, president, Price Brothers: "After fully considering matter have decided to quote $50 for second half of 1938."

R. J. Cullen, president, Canadian International Paper: " . . . . This action on our part was taken in spite of known increased costs for the last half of 1938. In making this announcement at this time we felt that such action on our part would be helpful to our customers in formulating their plans for the full year."

Joint Policies on Pulp and Paper

During the past week representatives of the Ontario Government have been in conference here with representatives of the Quebec Government in relation to timber exploitation and problems relating to the pulp and paper industry. An understanding—though not an official agreement—was arrived at regarding cooperation in the entire policies of the two provinces in respect to the newsprint and pulpwood industries.

The understanding covers lumbermen's wages and newsprint prices. It has been agreed that wage rates in the two provinces will be standardized in a general way, with the consideration due local conditions. Secondly, the two Governments will see to it that newsprint and pulpwood prices are kept in balance. No company will be permitted to undercut competitors to such an extent as to force down the wages of workmen in the industry.

Head of C. V. Meppel Co. Visits Boston

BOSTON, Mass., December 6, 1937.—Arthur Klein, president of C. V. Meppel Company, dealer in paper stock and rags, Rotterdam, Holland, is making his annual visit to the trade here, having arrived on the *S.S. Queen Mary* last Monday.

Henry D. Schmidt Heads Paperboard Men

The attendance of the annual meeting of the National Paperboard Association at the Waldorf-Astoria Hotel, New York City, Novem' er 18, hit a new high, representing 86 per cent of the association membership.

By a unanimous vote, the following were re-elected for the ensuing year: President, Henry D. Schmidt of Schmidt & Ault Paper Company, York, Pa.; vice-president, S. M. Phelan, Jr., of West Virginia Pulp and Paper Company, New York, N. Y.; executive manager, Frederick G. Becker, 40 East 41st street, New York City, and 80 East Jackson Boulevard, Chicago, Ill.; secretary and treasurer, H. S. Adler, 80 East Jackson Boulevard, Chicago, Ill.

Figures reported at the meeting indicated that the production of paperboard of all kinds during the year 1937 (production for November and December estimated) will exceed the production of the previous year by approximately 6 or 7 per cent.

Whereas the demand for paperboard was very strong, and the month to month increases over the corresponding months of 1936 were appreciable during the first half of the year, a lessening in demand started in the late spring and has continued to this time. The increasing demand anticipated during the fall months failed to materialize this year and current manufacturing operations are at a new low level for this season of the year.

Expressions as to the outlook for the future by those in attendance, representing large and small mills located in all parts of the country, were rather mixed.

Throughout the sessions it was emphasized that developments affecting the industry, such as new capacity, raw material costs, labor conditions and the tax situation, warrant most careful study by all members of the paperboard industry. In other words, there are important problems which must be faced, and, to meet this situation, a continuation of the constructive activities now well under way in the several groups of the association was strongly urged by President Henry D. Schmidt and others.

N. P. T. A. To Have Room Exhibit

Members of The National Paper Trade Association have recently received preliminary announcements regarding the Annual Convention to be held as usual at the Waldorf in New York City, Monday to Thursday, February 21-24. These dates, of course, are in "Paper Week" when the annual meeting of the American Paper and Pulp Association takes place.

Encouraged by the enthusiasm of both manufacturers and merchants over the exhibit of wrapping paper and paper products held in connection with last fall's convention in Chicago, plans have been made to repeat this feature. Fine paper manufacturers will be given the opportunity to participate if they desire to do so. Arrangements are being completed with the Waldorf to reserve the 9th floor of the hotel for the room exhibit, thus serving the general convenience, relieving the elevator service and helping to reduce congestion on the main floor of the hotel. An announcement presenting full information concerning the exhibit, space available, rates and rules will shortly be mailed to manufacturers of wrapping paper lines, specialties, twines, etc., and to such fine paper manufacturers as indicate their interest in this project.

Stable Prices Buoy Up Quiet Paper Trade

Buyers In Chicago Market Continue to Order in Minimum Quantities to Meet Requirements of Slackening Consumer Demand — Packaging Show To Meet In March — Silvercote Plant Sold — Other Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 6, 1937.—The Chicago paper market continues extremely dull. Buyers seem to have filled their needs, are concentrating on a reduction of inventory and, except for special requests, are conserving their buying to a marked degree. The weekly schedules of virtually all mills are reported to be materially shortened. There continues, however, to be prevalent a pronounced belief that the actual dissipation of inventory stocks is creating a future demand that, after the turn of the year, will be materially helpful in putting the paper industry back on the upward track.

Meanwhile prices continue fairly stable with the commonplace rumours concerning specific lines where demand is unusually slack. However, costs of production and materials have combined to prevent any marked reduction according to local observers. Fine papers showed no disposition to change during the week. Sulphite grades, watched with interest locally, failed to any noteworthy change. Books and covers were in a narrow groove. The kraft market reported little demand but a fair outlook following consumption of available supplies during the holiday period which, from a retail standpoint, looks very fair. Newsprint circles were closely following the $50.00 price situation in that market. Waste papers were very slow with the consuming mills obviously almost out of the market entirely. All grades were reported down.

Packaging Exposition to be Held in Marcn

The Chicago paper trade learned this week that the Eighth Annual Packaging Exposition was to be held at the Palmer House, Chicago, on March 22 to March 25. According to A. S. Dodd, president of the American Management Association under whose auspices the event is held, interest in the annual show is extremely gratifying. The Eighth Annual Conference on packaging, packing and shipping problems and technicalities is also scheduled to run simultaneously with the Exhibit. Approximately seventy five firms are expected to exhibit their wares covering virtually every angle of the packaging and shipping problem. The Exposition will also be featured by the awarding of the seventh Wolf award for outstanding merchandising and technical handling of packing and packaging.

A. D. Bain Joins Brower Paper Co.

A. D. Bain, formerly identified with the purchasing department of Montgomery Ward and Company as a buyer, has recently joined the sales staff of the Brower Paper Company of Chicago.

Specialty Converters Buy Silvercote

At a special stockholders meeting held in Chicago last week the Specialty Converters, Inc., East Braintree, Mass., announced the acquisition of the Silvercote line of insulation products. The company will take over Silvercote manufacturing operations in Kalamazoo, Mich., the general sales office in Chicago and the entire Silvercote organization. Specialty Converters are manufacturers and distributors of waterproof and reinforced paper products.

C. E. Stedman, founder and originator of Silvercote is to become vice-president in charge of sales and advertising, and is well known throughout the country in building circles for his pioneering work in the insulation field. It is planned to expand the Silvercote lines with probably a board form of insulation and a quilt form which will embody both the old and new principles of insulation. The merger was consummated, according to F. E. Donovan, president of Specialty Converters, because the company was convinced of a rapidly expanding market for a proper insulation that would answer the moisture difficulties which modern heating and air conditioning have created.

"Nothing we could do," states Mr. Donovan, "would so clearly reflect our confidence in the prompt stabilization of conditions in the building industry."

General sales office of Specialty Converters, Inc., will be maintained at 161 East Erie street, Chicago

J. P. Volgan Goes to Salesvertising

Douglass Doolittle, president of Salesvertising Associates of Chicago, has announced the appointment of John Paul Volgan as vice president in charge of production. Mr. Volgan has a varied advertising background of over twenty years, having served in the advertising departments of a number of large corporations and been connected with four well-known advertising agencies. He was recently the advertising manager of the Container Corporation of America.

Discontinues New Haven Branch

William W. Fitzhugh, Inc., manufacturers of labels and folding boxes, is discontinuing a branch of its folding box division formerly conducted in New Haven, Conn.

The operation, which has for the past several years been conducted in New Haven, has been merged with the company's plants at Ridgefield, N. J., and Brooklyn, N. Y., where facilities are adequate for the production of folding box work by the letter press or lithographic process. It is expected that through consolidation an improvement in manufacturing routine will result and that operating costs will be lower. The physical equipment formerly used in New Haven has been replaced with modern machinery.

The mechanical help associated with the company for many years has been retained and the operation of the various departments remain under the same supervision and control as formerly.

The company plans to transfer its general sales division from the main operating office in Brooklyn to a location in the midtown section of New York.

Paper Mills Denied Lower Freight on Coal

Wisconsin Manufacturers Lose Fight for Lower Rates on Fuel — Lake Superior District Power Co. Opens New Sub Station — Earle Murray Elected President of Northern Paper Mills — Other Late Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 6, 1937—Paper manufacturers lost out in their fight against an increase in coal freight rates in Wisconsin, it was revealed when an order was issued last week by the Wisconsin Public Service Commission permitting Wisconsin railroads to increase their freight rates on hauls between Wisconsin points. The increases will aggregate $200,000 a year.

Opposition to the increases was voiced in recent hearings by spokesmen of the Wisconsin Paper and Pulp Manufacturers Traffic Association. It was pointed out that a boost in the transportation cost of crude commodities, particularly coal, adversely affected and industry already in a serious condition by reason of competition from mills more favorably located with respect to supplies of cheap fuel, especially in the southern states and on the west coast. Evidence was presented showing the paper mills to be practically the largest shippers and consumers of coal of any Wisconsin industry.

The commission's explanation was that "we are satisfied from the record that the rates may be so resolved without imposition of unreasonable rates and without undue hardships or burdens upon any shipper." It was also said the commission's hand was forced by the Interstate Commerce Commission's recent order permitting increased rates nationally.

Lake Superior Power Completes New Plant

To give increased power to the Park Falls, Wis., district, where the Flambeau Paper Company is located, the Lake Superior District Power Company has completed erection of a 4,000 H. P. substation. The area now has a three-way power supply through a tie-in with the power plants at Ashland and Big Falls, Wis. Connection can be made with either a 33,000 or 88,000-volt line as the demand requires.

Safety Council to Meet in May

May 26, 1938 is the date set for the annual spring meeting of the Fox River Valley and Lake Shore Safety Council, according to announcement of H. D. Eiken of Green Bay, Wis., secretary. The gathering, which draws an attendance of approximately 10,000, will be held at Green Bay. It will be a one-day affair with general meetings, a sectional conference for the paper industry executives and employees, a parade and a banquet.

Earle Murray Heads Northern Paper Mills

Earle Murray, Green Bay insurance executive, was elected president of the Northern Paper Mills to succeed W. P. Wagner, who died recently. The board of directors also elected General Manager A. B. Hansen as executive vice-president, and Roy H. Purdy of Appleton, Wis., as vice-president. Henry W. Tuttrup was reelected treasurer and assistant to the president. G. E. Buchanan of Appleton, continues as secretary. Mr. Purdy is general manager of the Tuttle Press Company, and Mr. Buchanan is secretary-treasurer of the Appleton Wire Works, both of Appleton. The vacancy on the Northern's board of directors caused by Mr. Wagner's death will not be filled until the annual meeting.

Public Service Corp. to Make Improvements

Extensions and improvements totalling $3,310,000 will be made during 1938 by the Wisconsin Public Service Corporation, according to announcement of J. P. Pulliam, Milwaukee, Wis., president. The company's operations are chiefly in the Fox and Wisconsin River Valley paper mill sections.

The major item is the new hydro-electric plant to be built on the Wisconsin River between Tomahawk and Merrill, Wis. It will have a capacity of 17,500 kilowatts and will cost approximately $1,675,000, including necessary substations and the construction of a 32-mile 66,000-volt transmission line from the new plant to Wausau, Wis. Approximately $800,000 will be spent for new distribution lines. Improvements and changes in the present steam plants will cost about $115,000, and changes in hydro-electric plants will amount to around $100,000. Interconnections in the company's system will require about $65,000.

The construction budget exemplifies the pledge made by Wisconsin utilities to cooperate in any business revival plan designed by the president of the United States. The proposed outlay is more than double that of last year.

Shipping Dilts Hydrafiners to Crossett

The accompanying illustration represents a shipment of seven Dilts Hydrafiners for use in the Crossett Paper Mills, Crossett, Ark.

With these Hydrafiners now in use, the report

DILTS HYDRAFINERS FOR CROSSETT MILLS

from the Crossett Paper Mills is that they have delivered a service far beyond expectations—turning out a greater production and a cleaner sheet of kraft paper.

With these Dilts Hydrafiners in operation, this company is now producing up to 20 tons of high grade kraft paper per day.

Higher Newsprint Costs Expected in 1938

Production Costs for Next Year May Be $2.50 Ton Higher With Reduced Production a Possibility — Price Increase May Compensate for Lower Profits — Large Shipment of Pulp Wood — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 6, 1937.—With the announcement from International Paper Company of a price of $50 per ton for the last half of 1938, which will in all likelihood, be followed by all others, the industry finds itself in agreement on prices for the first time in several years. It is learned that newsprint production in some of the major units in Canada will be curtailed still further after the first of the year following the lead of International Paper, which will cut production by another half-day in addition to the full-day curtailment now in effort.

Production Costs Higher for 1938

Costs for the next year are expected to average $2.50 per ton higher than during the present year, and reduced production schedules will probably add $2 or more per ton to this figure. On this basis operating profits of $5 per ton during the present year on an average would be increased to about $8 per ton for 1938. On this same basis production could fall off by about 35 per cent before this year's profits would be bottomed.

There is already substantial evidence that this winter's wood cut will be below last year by a substantial margin. If by any chance a sharp upturn should take place during the early part of next year in consumption, a wood shortage, not only here but in the Scandinavian countries, would make a paper shortage a real threat.

Production for First Quarter Lowest for Year

Newsprint shipments to Antipodean countries will also be resumed with the coming year. The fact that these countries have been pretty well out of the Canadian market during the past year was not particularly noticed in view of the increase in United States consumption, and their return will be a more pronounced factor than was their absence.

Normally production during the first quarter of the year drops to the lowest of the twelve-month period. Four year average of percentages of annual production by Canadian mills shows the following performance by quarters: First quarter, 21.30 per cent of the full year's output; second quarter 25.30 per cent; third quarter 25.53 per cent, and fourth quarter, 27.86 per cent. The four-year average for the first six months of each year is 46.61 per cent and 53.39 per cent for the final half.

Price Increase Offsets Lower Profits

The effect of curtailment on profits will be compensated for during 1938 by the price increases which will become effective Jan. 1 with the base price moving from $42.50 a ton to $50 a ton for a major part of the output. The only part of the output of Canadian mills which will not benefit is small and represents about ten per cent of the output. It is that part which is covered by contracts which specify the Great Northern price, and in this instance the increase will be from $42.50 to $48 per ton for the first six months and $50 per ton for the final half of the year.

Wallboards Ltd. Moves to Larger Quarters

Wallboards Limited, Canada's largest exclusive manufacturer of wallboard have moved into larger quarters at 345 Dufferin Street, Toronto and have taken over the former J. I. Case plant at that address. G. N. Walker, manager of Wallboards Limited, has gone on a western Canada trip and will inspect the Vancouver plant of the company.

Irving Co. Ships Pulpwood

With a cargo of 1504 cords of choice pulpwood, the freighter, George L. Eaton, sailed from the wharf of Messrs. J. D. Irving, Limited, in New Brunswick, recently. The wood was shipped to Ogdensburg, N. Y., where the Irving Company of Buctouche, have shipped a large quantity of pulpwood during the past summer. The pulpwood industry has provided a considerable amount of employment during the summer months in Kent County. Farmers and others fortunate enough to have wood suitable for use as pulpwood found it profitable to cut and sell their product, which brought a much better price than it had during recent years.

Fire Damages Gair Paper Box Co.

Fire in the cardboard division of the Gair Paper Box Company on Carlow Avenue, Toronto, wrought several thousand dollars damage. Hundreds of large bales of cardboard and paper caught fire as the flames spread through the plant. The fire loss was estimated at $40,000. Of this amount $30,000 was to the contents of the building.

Howard Smith Mills Offer New Service

The sales promotion department of the Howard Smith Paper Mills, Limited, Toronto office, are offering office and factory executives a form analysis service. The announcement states that the forms sent in will be checked for the most economic size and proper weight, quality and color of the paper. The forms are then filed in a convenient reference book with a cost recording system and paper recommendation.

H. C. Draper Resigns from Forestry Service

Harry C. Draper, assistant deputy minister of lands and forests for Ontario, who recently resigned to take up a position as executive legal counsel for a number of different organizations headed by George H. Mead, of Dayton, Ohio, was honored by the timber and pulpwood operators in the Thunder Bay area at a dinner in the Prince Arthur Hotel at Port Arthur. An address was read and suitable gift presented to Mr. Draper.

Obituary

Harold Bing

The following obituary of Harold Bing, eastern representative of the Beloit Iron Works, Beloit, Wis., who died at Sandusky, Ohio, Sunday, December 5, was written by D. Lake, president, of the Sandusky Foundry & Machine Co.:—

Harold Bing died here this morning. He will be sadly missed by a host of friends, as well as by his immediate family. The funeral will be held from his home on Wednesday, December 8. By way of respect and sympathy, and to honor his memory, officers and old employees and his associates of the Sandusky Foundry and Machine Company will attend the funeral in a body. Although not in the employ of the Sandusky Foundry Company at the time of his death, he was considered one of us, one of the "gang". He was in the employ of this company for a quarter of a century, having resigned in 1930 to become a member of the staff of Beloit Iron Works, Beloit, Wis. His family never moved to Beloit; his home remained at Sandusky. He was a Sandusky product, was born here, attending Sandusky public schools, married a Sandusky girl, learned his trade here, and lived here all of his life. He was a machinist by trade—a good one—having gone to work in 1906 for this company and been in our employ ever since until 1930.

HAROLD BING

Although he had been in poor health for about a year, he was hopeful of recovery up to the end. He was game to the last, saying to his old friend, V. Denison, only yesterday that he had no idea of giving up the fight. That was Harold Bing. He was not a quitter. I have seen him in some tight places but he never knew when he was licked. The nearest he came to it was back in 1920 when the Management of the Sandusky Foundry and Machine Company promoted him from erecting man to salesman. Bing was first put on lathe work, after completing his apprenticeship, then became an all around machinist, and after a few years he was sent out in the field as an erecting man. Something in him above the average, some latent ability, must have been discovered in him to account for his having been taken out of line and placed in the more difficult and responsible field of erecting. Having made good in this department, in 1920 the demand for suction rolls having greatly increased, specialized sales efforts being called for, Bing's experience and ability were requisitioned. Bing's first job had been to build suction rolls in the shop. As an erecting man, his job was to put the then more or less experimental parts together in the mill and make them work. That called for craftsmanship, tenacity, ability to get along with the boss, with the superintendent, and with the "deck hands". Having made the grade, Bing was in line for the job of sales engineer. When he was first put on the road, in 1920, it made him ill. His qualifications, his talent for salesmanship, his engineering ability and ingenuity—perfectly obvious to others—were unsuspected by himself. For six months he was timid, self-conscious, fearful of falling down—but only for six months. Within the year he was going strong, meeting, impressing, and "selling" with equal assurance and success the "man who paid the bills", the purchasing agent, the mill manager, the superintendent, the machine tenders and the office boy. They were all his friends.

It is doubtful if any representative of any manufacturer, firm, or individual, catering to the paper industry, had a wider circle of close, intimate, man-to-man friends than Harold Bing. Bing-Denison-Theroux, the three Suction Roll Musketeers, were a combination in their field that might be likened unto the magical baseball trio "Tinker to Evers to Chance". Of the three, Denison is the only one left. Paraphrasing the Latin translation "Of the dead, nothing but good" to "Of the living, nothing", I shall refer only to Bing and Theroux, except to say parenthetically that Denison carries on from day to day, from year to year, capably, serenely, modestly, having apparently discovered the fountain of youth. Bill Theroux was one of the most finished salesmen of his day. He died suddenly several years ago. Peace to his ashes, honor to his memory.

Harold Bing, in time, became the roving suction roll ambassador who could go anywhere—and did; could put on overalls or wear long tails and silk topper becomingly and with dignity—and did; could match wits with the wittiest—and did; could be thrown out of the front door and walk right in at the back—and did; could pierce the hide of the most hard-boiled purchasing agent, discuss the state of the nation with the President of the mill, or swap artistic profanity with machine tenders—and did; in other words, he could hold his own wherever he found himself. He was a champion Pinochle player, a long-driving golfer, able to hold his own any time, anywhere, and in any kind of competition. Competitors found him a salesman who could and did bring home the "bacon".

At the time of his death, he was 56 years old, too young to be called so prematurely from the work that he loved so well and from an industry to which he made a real contribution and which held him in high esteem. He leaves a wife and three daughters. Needless to say, his friend and team mate, Verner S. Denison, was near at hand when the end came.

Walter R. Hicks

Walter R. Hicks, of 8,911 Ridge Boulevard, Brooklyn, president of Daniel M. Hicks, Inc., 565 Fifth avenue, dealers in supplies for paper and textile mills, died Sunday, December 5, in St. Peter's Hospital, Brooklyn, of pneumonia, following an operation. He was born in Brooklyn fifty-three years ago.

Permanently blinded in a bicycle accident at the age of 14, Mr. Hicks allowed the misfortune to have no more effect than was absolutely necessary upon his life. After the year's illness that followed the accident he spent three years at the New York School for the Blind. Then he started a tea and coffee business of his own, working from his family's home at 272 Halsey Street, Brooklyn, and, with the aid of a boy, making a house-to-house canvass and personal deliveries. Gradually he built up the venture so that he added a wholesale trade.

In 1908, when 24 years old, he joined his father, the late Daniel M. Hicks, who in 1895 had founded the mill supply company which then was situated at 140 Nasau Street. On his father's death in 1919 the blind son succeeded to the presidency, and under his direction the firm has increased its annual turnover several hundred per cent. An older brother, Albert T. Hicks, who is secretary and treasurer, usually accompanied him to and from the office.

For thirty years Mr. Hicks was one of the leading spirits of the Summer colony at Shelter Island, L. I. There he organized and managed baseball teams, wrote plays, including songs, and acted in them; owned two yachts, and went swimming.

He was a good bridge player, using braille-marked cards, and an astonishingly low scoring golfer. On the tee and through the fairway his companion would "face" the clubhead to the ball, and that was all the help he asked until he reached the green. There he made one of his few concessions and scored "two putts" every time. He was a sports observer, too; went to many football games and hundreds of big league ball games.

Mr. Hicks for a long number of years was the author of the resume on rags and paper stock in the Convention and Annual Review Number of the PAPER TRADE JOURNAL.

Surviving are his widow, the former Aimee Glynn; three children, Walter R. Jr., Janet P. and Margaret M. Hicks, and two brothers, Albert T. and Leonard F. Hicks, and two sisters, Mrs. Albert C. Rutan and Mrs. Dorothy Kahl.

William Linus Clark

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, December 6, 1937.—Hamilton friends learned today of the sudden death at his home in Bradenton, Fla., of William Linus Clark, for many years chief chemist of the Champion Paper and Fibre Company. Although Mr. Clark had not been in the best of health, death was unexpected. Mr. and Mrs. Clark came to Hamilton from New York state and during their residence here made many friends.

Mr. Clark, while associated with Champion Paper and Fibre company, perfected the use of casine in the coating of high grade paper.

Word of Mr. Clark's death came to Mrs. David Black, 550 Beal avenue, in a telegram from Mrs. Clark. Funeral services and burial will take place in Bradenton where Mr. and Mrs. Clark, since leaving Hamilton 15 years ago, maintained a winter home.

Win T. Mullen

KALAMAZOO, Mich., December 1, 1937.—Win T. Mullen, 60, of St. Joseph, Mich., died suddenly November 25 in his apartment in that City. The Mullen family has been identified with the paper industry for many years, his father being the inventor of the Mullen paper tester which is still used to determine paper strength. The Mullen Paper Company of St. Joseph was organized and operated by the elder Mullens until about fifteen years ago. For the past few years, W. T. Mullen had been associated with the Mullen Container Corporation, producers of food packages. He is survived by two sons who reside in Detroit and a brother James in California.

Rudolph Meili

DALLAS, Texas, December 4, 1937.—Rudolph Meili, while erecting a paper machine at the mill of Fleming & Sons, Inc., suffered a heart attack Tuesday afternoon, October 26, from which he died two days later.

Mr. Meili was born in Zurich, Switzerland, June 21, 1871, and emigrated to the United States in 1889. He immediately became connected with the Black-Clawson Company, Hamilton, Ohio, and has been connected with the paper making machinery industry during the entire period of his life.

His Masonic affiliation was made in 1893 at Hamilton, Ohio.

Mr. Meili is survived by his widow, six sons and three daughters.

Richard D. Murphy

Funeral services for Richard Dunbar Murphy, 44, sales manager of the Frazer Companies Ltd., Edmundson, N. B., 12 years, were held December 5, at the Forest Hills crematory chapel, Jamaica Plain, (Boston), Mass. He died December 2 at his home, 75 Southbourne road, Jamaica Plain.

He attended Boston Latin School and was graduated from Dartmouth College in 1917. He was a member of the Square and Compass Club, Boston. He is survived by his widow, a daughter, and his mother.

Fred L. Space

PHILADELPIA, Pa., December 2, 1937.—Fred L. Space, president of the Cherry River Paper Company, died from a heart attack on November 24. He was 72 years of age. A son, Clifford W. Space, and two daughters, Mrs. Willard B. Coombs and Mrs. Dan B. Davis, survive.

N. A. W. M. D. To Hold Luncheon

The New York Luncheon Club of the National Association of Waste Material Dealers, Inc., will hold its December luncheon on Tuesday, December 14, in the Colonial Room of the Aldine Club, 200 Fifth avenue, New York City.

As a meeting of the board of directors of the association is to immediately follow the luncheon, it is anticipated that a goodly number of out-of-town dealers will be in attendance at the luncheon.

The cost of the luncheon will be $1.50 per person including refreshments served from 12:30 to 1 as well as the luncheon served from 1 to 2. Reservations should be made in advance of the luncheon by letter, wire or telephone (Telephone BRyant 9-1318) to association headquarters, 1109 Times Building, New York.

CHEMICAL EXPOSITION OPENS LARGE DISPLAY

(Continued from page 15)

and by means of leakless pilot valves and cams. Around this cycle controller, standard recording and controlling instruments are built to operate valves, blowers, dampers and electrical equipment. Through the cycle controller, the operation of these instruments is controlled to a time program, so that the devices to control such variables as time, pressure, liquid level, flow, humidity, speed and mechanical motion, may be operated automatically. The system provides for a machine in the form of a panel board. A new line of instruments, including the Bristol Pyromaster Potentiometer Pyrometer Controller is on display. The pyromaster instruments—recorders, controllers and indicators—are built in standard 12-inch cases. Other instruments shown include the Bristol Flow Meter, for recording, indicating and for remote control.

Brown Instrument Co.

The importance of process control in the chemical industries is demonstrated by The Brown Instrument Company, Philadelphia, Pa., a division of Minneapolis-Honeywell Regulator, at its main floor booth. Among the several new instruments shown are the Brown pneumatic control transmission system, for the recording of liquid measurement and control at a remote point; the Brown air-operated controller with safety cut-off switch, which may be set for signal or alarm or to stop and start motors, etc. The Brown Electr-o-Line automatic temperature control comprises three units: a control instrument to actuate a proportioning resistor contact and a reset contact; the Electr-o-Line relay linking the control instrument to the motor mechanism; and a reversible motor mechanism which actuates the control valve. The Brown multiple-recording potentiometer pyrometer, for recording several temperatures on one chart, which will also control up to six temperatures from as many different thermocouples, is said to be the only instrument of its kind on the market. Other Brown instruments exhibited include the Brown Air-o-Line control system, the Brown multiple recording potentiometer, Brown flow meters, and the Brown manually balanced potentiometer.

Combustion Engineering Co., Inc.

Three types of industrial equipment are featured at the exhibit of the Raymond Pulverizer Division, Combustion Engineering Company, Inc., Chicago, Ill., on the main floor. The Raymond Bowl Mill for grinding coal and direct-firing rotary kilns is shown. Another item of equipment is the company's Mechanical Air Separator with patented whizzer and equipped for producing extremely fine and uniform classification, up to 99.9 per cent passing 325-mesh. The Raymond New Roller Mill with Whizzer, which provides wide flexibility and increased capacities is also displayed.

Crane Co.

Fifty different items in valves and fittings are displayed by the Crane Company, Chicago, Ill., at its booth on the second floor. Valves and fittings made of various alloys to handle corrosive materials are shown as are units made of iron, steel, brass or bronze, to control the flow of steam, water, oil and air. In the exhibit of units for corrosive materials, the company displays special equipment made of chrome nickel alloy, steel, monel metal, Everdur metal, acid bronze, aluminum, and nickel; in many cases the same valve is shown in many different alloys, depending on the work it is designed to accomplish.

Dorr Co.

Several operating exhibits are featured at the booth of The Dorr Company, Inc., New York, on the main floor. The major units of the company comprise agitation, classification, thickening, clarification and washing operations employed in the process industries. The operating exhibits include the Dorr Tray Thickener, Trade Waste Water Treatment and the Counter Current Decantation for chemical processing. The Water and Waste Treatment is designed for purifying water for industrial use and treating wastes to prevent stream pollution. Dorr Agitators are designed to maintain in a homogeneous condition any pulp that will flow.

Duriron Co., Inc.

Equipment designed for corrosive service is featured at the exhibits of the Duriron Company, Inc., Dayton, Ohio, on the main floor. Durimet and Durco stainless products, such as pumps, valves, pipe fittings, and special engineering products in stainless steel, with particular reference to the sulphite pulp industry, are displayed. Also on exhibit is a general line of Durion and Durichlor centrifugal and reciprocating pumps, in sizes from 1 to 10 inches; a wide range of valves, ½ to 12 inches and of six distinctive types; all for use in handling alum, bleaching liquor, and other chemical solutions which are responsible for corrosive conditions in the paper industry.

Electro Bleaching Gas Co.

A varied line of industrial chemicals are exhibited at the booths of the Electro Bleaching Gas Company and Niagara Alkali Company, New York, on the main floor. A figure of the "Pioneer", such as appears in the company's advertisements, cut from sheet brass and copper with shears, is in the center of the two booths, below which is a turntable on which the chemical products of the companies are displayed in glass jars.

Filtration Engineers, Inc.

"FEinc Filters" are featured at the exhibit of Filtration Engineers, Inc., New York, on the main floor. The FEinc continuous filter as used in the chemical and pulp and paper industries is equipped with drum and tank of stainless steel. It is equipped with string discharge, non-grinding valve, cake compressor, washing belt, spiral drainage, member and separately driven agitator.

Foxboro Co.

Controllers in operation are displayed at the booth of The Foxboro Company, Foxboro, Mass., on the main floor. These items include the Foxboro Two-

Position Controller, Foxboro Throttling Controllers with automatic, and manual reset. Other items displayed are a Foxboro Air-Operated Controller, the Foxboro Indicating and Recording Thermometers, Bell-Type Recording Flow Meter and a Foxboro Potentiometer Recording Pyrometer.

General Alloys Co.

Acid resisting materials and many items of equipment for the chemical and other industries are displayed at the booth of General Alloys Company, Boston, Mass., on the second floor. Among the numerous items are Ferrous Alloys, Dipping Baskets, Caustic Pots, Corrosion Resisting Couplings, Acid Resisting Fittings, Fume Hoods, Alloy Acid Resisting Pipe, Valves and fittings.

General Electric Co.

A new recording spectrophotometer is featured at the booth of the General Electric Company, Schenectady, N. Y., on the main floor. This is a new tool in microchemistry, making possible by colorimetric analysis the determination of the amount of color or material present in either solutions or dyed specimens. With a photoelectric tube substituted for the human eye, the recently developed spectrophotometer applied as a new tool of analytical chemistry, has been able to "see" and accurately estimate the quantity of as little as two millionths of a gram of material present in a 25 cubic centimenter sample. Titanium in the presence of iron has been satisfactorily estimated in cases where the ratio of iron to titanium was as high as 400 to 1. Explosion-proof motors and explosion-proof control devices are also displayed.

Goslin-Birmingham Mfg. Co., Inc.

Filter and evaporator equipment is exhibited at the booth of the Goslin-Birmingham Manufacturing Company, Inc., New York, on the main floor. Of particular interest to the paper industry are the Vallez filters, which are used on filtration of black liquor feed to the evaporators. The company states the filters are of cyclic pressure design but the operation is entirely controlled by opening and closing the valve and the filter is not opened during the operating period. A novel forced circulation higher concentrator, designed by P. B. Sadtler is also shown. This design incorporates a horizontal heating element and a novel decelerating chamber for the prevention of foaming and separation of the circulated liquor from the vapors.

Haveg Corp.

"Haveg" equipment molded from a mixture of a special acid-washed asbestos and a synthetic phenol formaldehyde resin, is exhibited by the Haveg Corporation, Newark, Del., on the main floor. The standard types of equipment include piping, fittings and fume duct. By means of the molding process employed, the corporation states its tanks, towers and kettles can be furnished with inlets and outlets molded integrally in the body of the unit. Single, one-piece cylindrical tanks can be made as large as 9 feet in diameter and 9 feet high, while one-piece rectangular tanks can be supplied as large as 13 feet. Larger units are made by bolting together two or more sections with gaskets between the joints.

Hercules Powder Co.

Many important products which have been developed through extended research are included in the exhibit of the Hercules Powder Company, Wilmington, Del., on the main floor. One item of particular interest to the paper industry is Dry Plasticized Size, a new paper size in dry powdered form, composed of a completely saponified rosin soap, the rosin being plasticized to reduce its melting point and raises its waterproofing qualities. Other Hercules products shown include Truline Binder, to produce cores, a new concrete paint base and quick-drying varnishes in which "Tornesit"—a Hercules ethyl cellulose—is used. Among the twenty-two products bearing the "Petrex" name is Petrex 7, a binder for pulp pigments. The company states that it is miscible with water, though the film is waterproof upon drying, and that aqueous colors are not subject to mold or putrefaction.

International Nickel Co., Inc.

Application illustrative of the engineering qualities of its products with particular reference to corrosive problems, is featured at the exhibit of the International Nickel Company, Inc., New York, on the main floor. Among the varied products shown are Monel, Nickel, Inconel, heat treatable "K" Monel and "Z" Nickel, cast "S" Monel and "H" Monel, Nickel-Clad Steel and Inconel-Clad Steel. Advances in the welding of Nickel, Monel and Iconel are featured. There is also shown practical applications of Nickel containing irons, high nickel-chromium alloy castings and non-ferrous alloys, including nickel silvers and nickel bronzes.

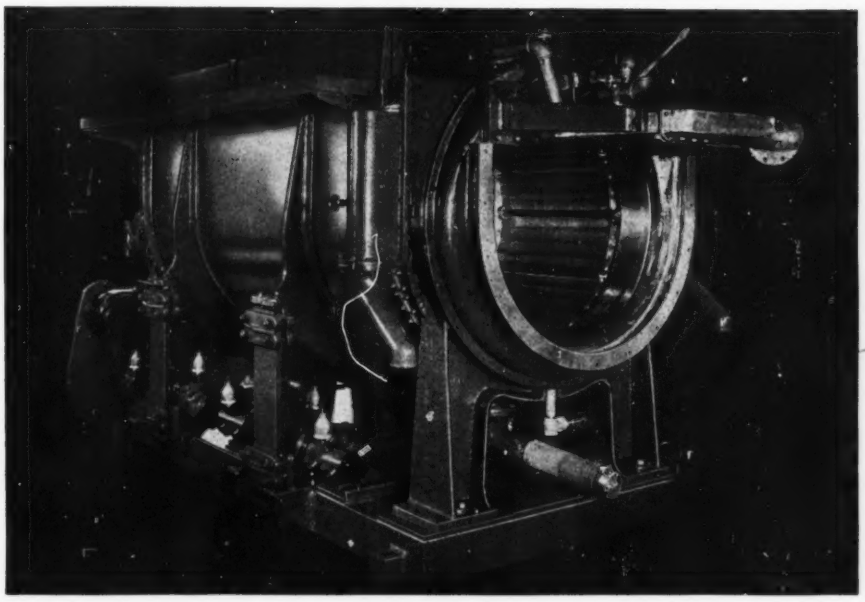
Jeffrey Manufacturing Co.

An operating set-up of Jeffrey-Traylor equipment in a closed circuit, with the four units enclosed, forms the exhibit of The Jeffrey Manufacturing Co., Columbus, O., on the main floor. Unit one, comprises the Waytrol, a constant electrically controlled weight feeder applicable to continuous weigh-feeding, proportioning and batching of chemical materials. This unit is totally enclosed and is made in sizes to handle a few pounds up to many tons per hour. Unit two, is the new 2-A Spreader Feeder with wide feed pan. The third unit is the company's newest electric vibrating screen, 1 foot by 2 feet, for close sizing, scalping ahead of sacking machines and for by-passing fines ahead of pulverizers. It can be totally enclosed and is furnished in mild or stainless steel, with single or double deck. Unit four, is the company's newest electric vibrating conveyor, designed for conveying relatively small capacities over short or long distances, where the protection of total closure is required. This unit is furnished as a tubular conveyor in glass, stainless steel, aluminum, or mild steel. It operates from alternating current and the capacity can be instantly varied.

Johns-Manville

"Celite, The Story of the Diatom" is a feature at the exhibit of Johns-Manville, New York, on the main floor. This picture graphically portrays how diatomaceous earth, composed of tiny skeletons of microscopic marine plants, is mined and processed to to make high temperature insulating materials. Research activities in the world's largest laboratory devoted exclusively to the development of diatomaceous

IS YOUR PAPER AS GOOD AS THIS SCREEN CAN MAKE IT?



If you're not yet putting your stock through the big, modern Bird Screen with fine cut plates, you're putting your paper under an increasingly heavy handicap.

Mill after mill, making your grade of paper, has been installing these new Bird Screens and getting twice-as-clean paper at lower screening cost per ton.

Why not find out what this new Bird Screen can do for you?

BIRD MACHINE CO.

SOUTH WALPOLE • MASS.

BIRD SCREENS

YOU CAN MAKE MORE MONEY WITH NEW BIRD MACHINERY

earth products is also shown. Cine micro-graphs enable one to see into the organisms of actual living diatoms, greatly enlarged, while micrographs picture the varieties of the skeletons of diatom plants. One cubic foot block of Celite on display contains 100 billion individual fossil diatom skeletons. Other types of high and low temperature insulating materials are shown, including Transite asbestos-cement stack and flue pipe for venting industrial gases and acid fumes.

Leeds & Northrup Co.

"Micromax" recorders and control equipments are featured at the booth of the Leeds & Northrup Company, Philadelphia, Pa., on the main floor. Recent developments in the use of the company's recorders and new instruments for plant and laboratory are displayed. A new, improved apparatus for measuring and recording CO_2 is displayed in operation. The recently developed Micromax electric control is shown as it is applied to automatic control of water treatment in industrial filter plants, where process operation requires a neutral water, and wherever the pH of water affects efficiency of operation. Several new laboratory instruments for the accurate measurement of pH are also exhibited. Other items consist of indicators, recorders and controllers for the measurement and control of conductivity and temperature.

Link-Belt Co.

The equipment featured by the Link-Belt Company, Chicago, Ill., exhibited on the second floor, comprises the P.I.V. Gear, which provides positive, infinitely variable speed transmission, silent chain drives, motorized speed reducers, screw conveyor, and the Roto-Louvre dryer. Belt conveyor idlers and power transmission units are also shown. In a picture-changing mechanism, numerous installation pictures displayed Link-Belt equipment in operation.

Nash Engineering Co.

A comprehensive showing of pumping equipment forms the exhibit of the Nash Engineering Company, South Norwalk, Conn., on the second floor. A new type of Nash Compressor and Vacuum Pump, especially designed for chemical plant work is displayed. The company states that this pump is the result of several years of study of chemical plant needs. Increased vacuum and pressure ranges are featured. Another feature is a demonstration of the ability of the Nash Compressor to deliver clean air for chemical and process work. The demonstration is made by means of a special laboratory test in actual operation, enabling the chemical engineer to see how the Nash Compressor removes contamination from incoming air.

National Lead Co.

Lead lined equipment is demonstrated at the booth of the National Lead Company, New York, on the second floor. The items include lead lined and tin lined pipe, fittings, valves, tank connections, homogeneous lead lined vacuum apparatus, evaporators, steam jacketed kettles, treater drums, car tanks and lead covered heating or cooling coils. Antimonial sheet lead, chemical sheet lead, tellurium lead pipe are also shown. Among the vacuum items are concentrators for spent sulphuric acid, chamber acid, sludge acid, stills for purification of impure acid, evaporators for weak solutions of sulphuric and phosphoric acids, coolers etc. Antimonial lead, Babbitt metals, casting metals, type metals, and solder are demonstrated, also Britannia or pewter in sheets and circles, block tin sheets, gasket metal, laminated sheets, expansion and screw anchors.

Norton Co.

A varied line of products are exhibited by the Norton Company, Worcester, Mass., on the third floor. The items include pulp stones, abrasives, grinding wheels and machines, oil stones, sharpening specialties, laboratory ware and lapping machines. The Norton Porus Mediums are also shown in various grades for filtering by gravity, vacuum or direct pressure, liquors containing coarse crystalline, or finely divided solids. Norton porus mediums are made of electrically fused alumina grains bonded together with a high alumina glass and fired to a high temperature. By means of the company's exclusive "Controlled Structures", the grain spacing is stated to make more precise and scientific duplication possible in the products. A variety of plates and tubes are made to meet the varying filtration requirements of industry.

Oliver United Filters Inc.

Oliver United Continuous Filters for the pulp and paper industries were featured at the exhibit of Oliver United Filters Inc., New York, on the main floor. The booth was arranged like the board in the customers' room of a stock exchange house, with news strip above and illuminated photographs of the company's filtering equipment below. Of particular interest are the Oliver Savealls, Deckers, High-Density Thickeners, Bleach Washers, Oliver-Young High-Flow Filters, Brown Stock Washers, Lime Mud Filters, Board Machines, Clarifying Filters, Oliver-Pelton Pumps and accessories.

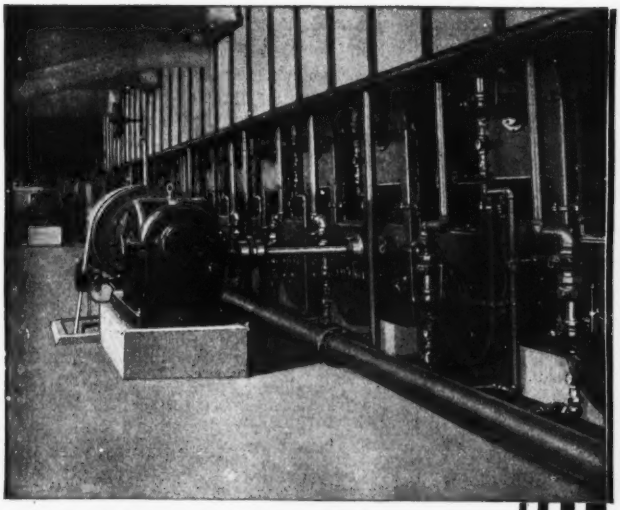
Philadelphia Quartz Co.

Thirty-three of the most important varieties of liquids, solids and powders manufactured by the Philadelphia Quartz Company, Philadelphia, Pa., are displayed at the company's booth on the second floor. The many properties of silicates of soda which are not shared by other alkaline salts are demonstrated. This applicability includes the fiber container, which utilizes the adhesive quantities, while another class of applications include protective or preservative coatings for wood, paper, etc. The detergent or cleansing properties of metasilicate is yet another quality. An interesting feature of the exhibit is a Silicate Use Meter which helps to visualize the various fields where silicates of soda are useful.

Revolvator Co.

The "Wallclimber", two level freight elevator is the principal attraction at the exhibit of the Revolvator Company, North Bergen, N. J., on the third floor. This new type of freight elevator has been developed for one story service, lifts up to about 12 feet and occupies a minimum of space. The car size is 7 by 10 feet and capacities range up to 5000 pounds. The elevator machinery is located overhead and rails, cables, anchorage and counterweights occupy only 11 inches of space on one side. All three sides of the car are available for openings. Instantaneous self-aligning type safeties act in the event any of the cables should break. The Revolvator beam truck and the Red Giant hydraulic lifttruck, Model S, with standard capacities from 2,500 to 15,000 pounds is also demonstrated.

BELOIT *high-speed* DRYER CONDENSATE REMOVER



SAVES HORSE-POWER AND STEAM THROUGH GREATER REMOVAL OF WATER AND AIR

MAINTAINS MAXIMUM DRYING EFFICIENCY *always*

HERE'S a comparatively new development for dryers that saves tremendously in horse-power and steam by maintaining maximum drying efficiency in the dryers.

•

The *Beloit* Way is the *Modern* Way

•

BELOIT IRON WORKS, Beloit, Wis., U.S.A.

The **BELOIT**

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS.

St. Regis Paper Co.

"Multi-Wall Protection" is the slogan at the exhibit of the St. Regis Paper Company, New York, on the third floor. Among the principal units displayed is a full size St. Regis valve bag filling machine, as well as equipment for closing open-mouth paper bags. Filled and empty 100 pound multi-wall paper valve bags of the type now being used for chemicals, such as calcium chloride, fertilizer, ammonium phosphate and sulphate, alum, etc., are shown together with bags for sugar, salt, etc. Included in this group are multi-wall paper bags of moisture-proof construction, designed especially for hydroscopic and deliquescent chemicals.

Swenson Evaporator Co.

The exhibit of the Swenson Evaporator Company, Harvey, Ill., on the main floor consists of photographs of equipment and installation. Experienced engineers are present at the booth to discuss industrial problems relating to the unit process of evaporation, filtration and crystallization.

Taylor Instrument Companies

Automatic temperature control systems for various types of grinders are shown at the booth of the Taylor Instrument Companies, Rochester, N. Y., on the main floor. The companies state that groundwood produced by Taylor Control is notably free from coarse or bundled fibers caused by low temperatures and flour or fine pulp caused by excessively high temperatures. Of particular interest also, is the Taylor Press-Roll Load Recorder, which is claimed to give higher average press-roll pressure and lower paper drying cost.

Union Bag & Paper Corp.

A wide variety of paper bags is featured at the exhibit of the Union Bag, Paper Corporation, New York, on the third floor. The forms of paper bags in use in the chemical and other industries are shown. Of particular interest is Union's Sift-Proof Square Bag, which is widely used in the chemical industry for the packaging of insecticides and other chemicals in powder form.

Westinghouse Electric & Mfg. Co.

A varied line of motors and electrical equipment is displayed at the booth of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., on the second floor. Of particular interest to the paper industry is the "Type DNO Immersed Line-starter." This equipment affords five-point protection of non-fuze circuit breaker, motor, operator, mechanism and property. Full protection is also provided against corrosion and explosion hazards. A splash-proof motor is also shown, which assures full protection againt the splashing liquids found in many process industries. A mercury arc rectifier and other motors and equipment are also exhibited.

West Virginia Pulp & Paper Co.

The Industrial Chemical Sales Company, Inc., Division of West Virginia Pulp and Paper Company, New York, exhibit a varied line of products on the main floor. The company's Nucher activated carbon is of particular interest. It is used in the purification of sugars, syrups, vegetable oils, lard and other animal fats, fruit juices, vinegar, organic and other acids, and a long list of chemical, drug and pharmaceutical products. The company states this product plays an important part in improving the flavor and odor. The latest advancement is in the development of the products of the pine tree, which include Indusoil, Liqro, Crude Fatty Acids, Pitch, Cymanol, Pine Oil, and Abietic Acid Crystals. The latter is a very pure form of rosin, used in paper sizing and the processing of rubber, and in the manufacture of plastics and similiar products.

Wilkens-Anderson Co.

The Cameron pH Recorder is the featured exhibit at the booth of the Wilkens-Anderson Company, Chicago, Ill., on the second floor. The glass electrode measures the pH or hydrogen-ion concentration used in white water, flue size, bleaching liquor, etc. and may be used in oxidizing or reducing liquors, chlorine laden solutions and heavily colored or turbid materials. The company states that one recorder and three valves to serve three Fourdrinier machines was installed in July in a paper mill employing three eight-hour shifts of chemists. The recorder may be installed at one hundred or more feet distant for convenient remote-control recording.

Worthington Pump & Machinery Corp.

A new line of chemical centrifugal pumps is the principal feature at the exhibit of the Worthington Pump & Machinery Corporation, Harrison, N. J., on the second floor. These pumps are known as Worthington-Antaciron pumps, with the liquid ends constructed of Antaciron; and Worthite pumps, with the liquid ends made of Worthite. Antaciron or anti-acid-iron is manufactured by Antaciron, Inc., Raritan, N. J., and is said to be an unusually pure high silicon iron. Worthite is Worthington's new acid-resisting alloy steel, which is said to be resistant to solutions with solids in suspension. The chemical pumps are made in capacities up to 500 g.p.m. and heads up to 125 feet, at 1750 r.p.m. Other items include a compressor, steam-jet air ejector and a rotary pump. One of the chemical pumps is shown in operation, forcing a liquid through a transparent tube.

Hourly Wage Rate in Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

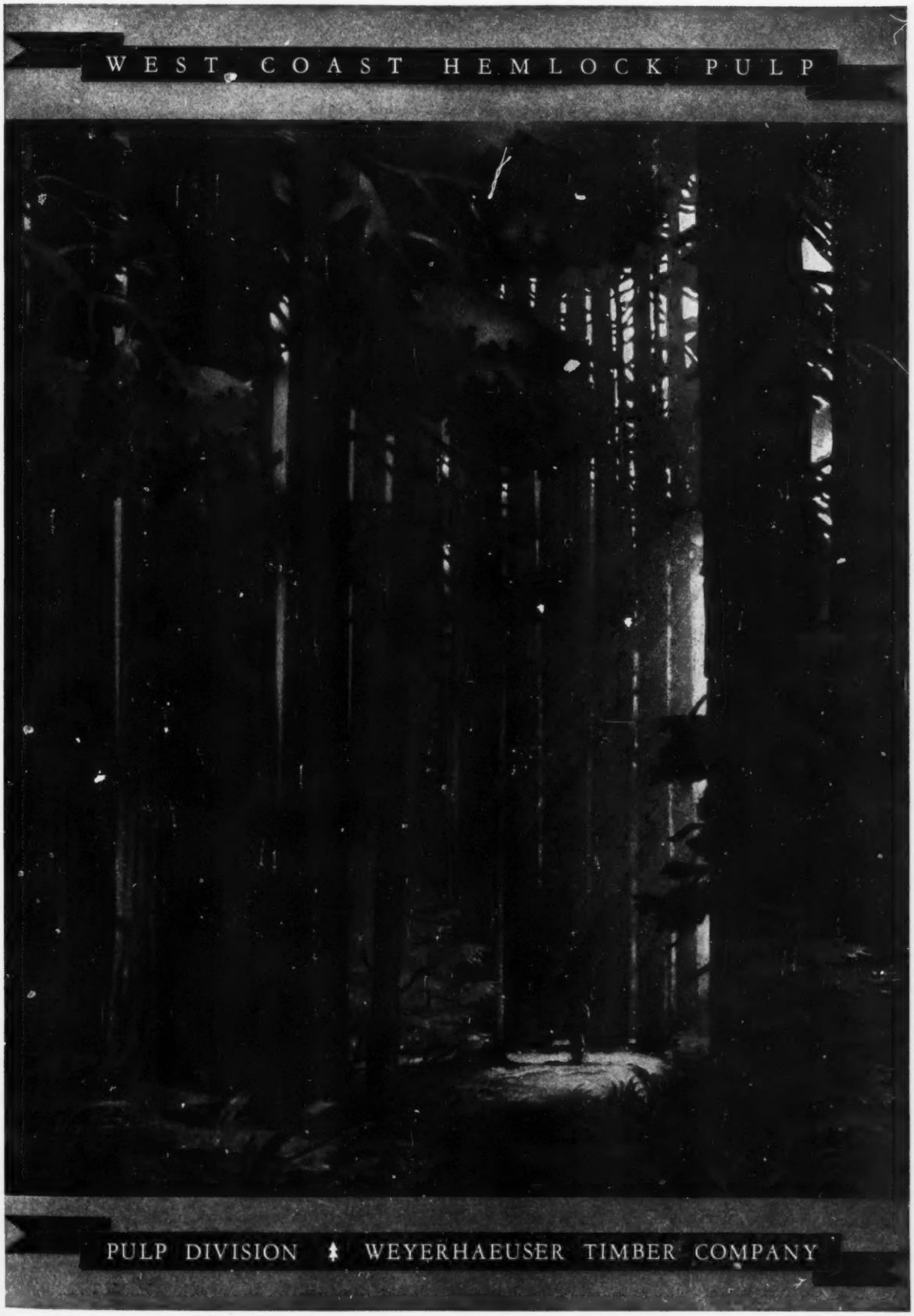
WASHINGTON, D. C., December 8, 1937.—A study has just been completed by the Bureau of Labor Statistics, Department of Labor, of the hourly entrance rates of common unskilled laborers in the paper and pulp and nineteen other industries in July of this year.

The study shows, in the paper and pulp industry that the average hourly entrance rates for the United States was $.477; for the north it was $.511 and for the south, $.396. In this same industry the percentage of common laborers receiving less than 40 cents per hour was 14.5 in the whole United States; 1.7 in the north and 44.8 in the south.

Carter, Rice in Larger Quarters

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 6, 1937.—Carter, Rice & Co., Corp., are now established in their new quarters at 273 Summer street, where they have much more room and added facilities.


WEST COAST HEMLOCK PULP
PULP DIVISION ✦ WEYERHAEUSER TIMBER COMPANY

Delaware Valley Paper Shippers Progress

This month marks the first anniversary of the Delaware Valley Paper Shippers Association which is composed of the following Paper Mills and Converters, located in Pennsylvania, New York, New Jersey and Delaware:

Benj. C. Betner Company, Devon, Pa.
Cellulose and Paper Converting Company, Philadelphia, Pa.
A. M. Collins Manufacturing Company, Philadelphia, Pa.
Curtis Paper Company, Newark, Del.
Dill & Collins, Inc., Philadelphia, Pa.
Glassine Paper Company, West Conshohocken, Pa.
P. H. Glatfelter Company, Spring Grove, Pa.
W. C. Hamilton & Sons, Miquon, Pa.
Jessup and Moore Paper Company, Philadelphia, Pa.
E. Latimer, Jr., Philadelphia, Pa.
Geo. La Monte & Son, Nutley, N. J.
Lowe Paper Company, Ridgefield, N. J.
McDowell Paper Mills, Manayunk, Philadelphia, Pa.
National Metal Edge Box Company, Philadelphia, Pa.
Paper Manufacturers Company, Inc., Philadelphia, Pa.
Paterson Parchment Paper Co., Bristol, Pa.
Penn Card and Paper Company, Philadelphia, Pa.
Racquette River Paper Company, Potsdam, N. Y.
Riegel Paper Corporation, New York, N. Y.
Thomas M. Royal & Company, Philadelphia, Pa.
Shallcross Company, Philadelphia, Pa.
Wolf Brothers, Philadelphia, Pa.

The Delaware Valley Paper Shippers Association which has made remarkable progress since its beginning twelve months ago, was organized for the purpose of pooling tonnage of Paper and Paper Products under one classification for shipment throughout the United States, in carload lots. The original membership consisted of twelve of the above companies, who contributed enough tonnage to maintain a modest regular schedule of weekly cars to Chicago and Cleveland-Detroit, and semi-monthly cars to Cincinnati-St. Louis and Minneapolis-St. Paul. Membership gradually increased to the present twenty-two companies, and is operating on the following extensive schedule:

Two cars a week to Chicago.
One car a week to Texas and Oklahoma points.
One car a week to the Pacific Coast.
One car a week to Pittsburgh.
One car a week to Cleveland-Toledo-Detroit.
Two cars a month to Cincinnati-St. Louis.
Two cars a month to Minneapolis-St. Paul.
Occasional cars to Omaha, Denver, Columbus and New England.

Tonnage has increased each month over the previous month and October 1937 shipments were the largest yet.

The need of such an organization was felt for several years by many paper mills and converters in the Philadelphia area. The success of the Delaware Valley Paper Shippers Association is based entirely upon complete cooperation of all members. Pool cars are loaded at the mills of various members, and in this way, expenses are kept at a minimum, so that the contributors actually pay the carload rate of freight, plus a small assessment.

Officers of the association are: Chairman—D. Bustraan, Paterson Parchment Paper Company; Secretary-Treasurer—John A. Butterworth, W. C. Hamilton & Sons; Executive Committee—W. A. Mercurio, Riegel Paper Corporation; Ralph B. Thomas, Dill & Collins, Inc.; John A. Stevens, Thomas M. Royal & Company.

The association held its first annual banquet in Philadelphia on November 29. Plans were discussed for further expansion in membership and an increase in the number of destinations. The association will welcome any inquiries or suggestions for the bettering of its service to the Paper Industry.

Automatic Tacker for Cylinder Tapes

Of interest to every paper mill using cylinder machines is a new unit for automatically tacking the tapes to the bronze screen covers on the cylinders.

Many mills use pins which are forced by hand through the tapes into the mesh of the cover. This method is slow and entails longer periods of shutdown which are costly. These tapes can now be applied by means of a one hand tacker which loads with strips of 140 bronze tackpoints similar to a staple, and the legs of which are the same diameter as a pin.

With this machine an operator can place the tape with one hand and follow right along with the tacker fastening the tape as fast as he can squeeze the handle.

The machine is compact and powerful, weighing only 1½ pounds, and an internal trip hammer permits automatic feeding and driving of the tackpoints.

This machine can be interchanged with steel tackpoints of the same size for other tacking operations in the plant. One mill using this device reports a saving of two hours in time over the old method with a saving of over 500 per cent on the investment on each shut down for tape changes.

Further information can be obtained from the manufacturer, The A. L. Hansen Manufacturing Company, 5038 Ravenswood Avenue, Chicago, Ill.

A New Foxboro Bulletin

Flow Meters for 1500 lbs. Working Pressure, a new bulletin just issued by the Foxboro Company, Foxboro, Mass., describes special flow meters for high pressure measurement.

A sectional view of the Type 7000 meter shows the forged steel chambers, recessed and serrated gasket surfaces, bearing lubricator, pressur-tite bearing, patented chain and segment drive, positive acting check valves and threaded and welded joints.

The Type 7417 universal flow meter is described for use where a meter is desired with a uniform flow scale able to record temperature and pressure on the same chart with the flow. Interested persons should write to Foxboro for a free copy of D.M.F. 726.

Dexter North Goes with Arthur Little

Dexter North, chief of the Chemical Division of the U. S. Tariff Commission, and before that with Marathon Paper Mills, has resigned to become associated with Arthur D. Little, Inc., research chemists and engineers of Cambridge, Mass., as their Washington technical representative. His work for the commission included direction of the sodium sulphate investigation, and participation in the casein investigation.

In his new work Mr. North will continue to obtain and assemble technical, economic, and statistical information concerning the chemical and other process industries from the many active sources at Washington. Through his present association, however, similar investigations will be made directly for industrialists, as a part of the technical investigations made by the Little laboratories for their clients.

The appointment of Mr. North to this post results from the steadily increasing extent to which the Little laboratories have found it necessary to draw upon the technical resources of the many government bureaus, scientific societies, and trade associations whose activities are centered in Washington, as a part of technical investigations for American industrialists and investment bankers.

During Mr. North's long service with the Tariff Commission he became thoroughly familiar with these resources as a part of his work in directing the gathering of information and compilation of reports on the competitive aspects of the chemical and related industries, including such phases as raw materials, interprocess and interproduct competition, transportation and marketing, monopolies and tariff considerations.

Mr. North, a native of Brookline, Mass., is a graduate of Hamilton College (1913) and of the Massachusetts Institute of Technology (1916). Since 1921 he has been successively Special Expert and Chief of the Chemical Division of the Tariff Commission. He is a son of the late Dr. S. N. D. North, Secretary of the National Association of Wool Manufacturers from 1890 to 1903, and Director of the Census under the administration of Theodore Roosevelt.

Lectures at Paper Study Course

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 6, 1937.—Wm. R. Maull vice-president of Dill & Collins, Inc., Leonard Fitzgerald, Hummell-Ross Fibre Corporation, and Harrison Elliott, Advertising Manager of Japan Paper Company, will be in charge of Lecture No. 2 in the series of twelve of The Paper Salesmen's Study Course, in the Franklin Institute tomorrow (Tuesday) evening. Mr. Maull will have as his topic, "Putting the Pulp Over the Fourdrinier." Mr. Fitzgerald will explain the intricacies of "The Cylinder Machine," while Harrison Elliott will give a demonstration and talk on "Handmade and Mouldmade Papers." Mr. Elliott has been interested in this type of paper-making for many years, and was formerly associated with the well-known national authority on Handmade papers, Dard Hunter. His wide experience and pleasing personality will make this portion of the program most interesting.

Rochester Paper Co. Announces Winners

The contest begun by Rochester Paper Company among several of its more prominent distributors with cruises to South America as prizes for the winners ended on November 30th.

The winners, as announced by Paul G. Cook, sales manager, are as follows: Inter-City Paper Company, St. Paul; Beecher, Peck & Lewis, Detroit; Tobey Fine Papers, Inc., St. Louis; Chatfield & Woods, Pittsburgh; Central Ohio Paper Company, Cleveland; San Antonio Paper Company, San Antonio; Carter, Rice & Co., Inc., San Francisco; Paper Service, Inc.; Rochester, N. Y.; Bond-Sanders Paper Company, Nashville; Standard Paper Company, Tacoma; and J. E. Linde Paper Company, New York.

In addition to all expense cruise tickets, the leading blotting paper salesman of each of the above companies will receive free round trip transportation to Rochester, Mich., for an inspection of the mill the day before sailing, and from there to New York where they will embark January 8 on the Holland-American Liner *Statendam* for a cruise through the southern Atlantic to Puerto Rico, Martinique, Barbados, Trinidad, Curacao, and the South American continent.

With unusual emphasis on fairness all paper distributors in this year's contest were bracketed together in relation to their respective volumes for the previous year and the 11 prizes split up among the four divisions. Thus, representatives from both large and small distributors will be included in the party.

Philadelphia Trade Improves

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 6, 1937—Increasing evidence that the recession in the paper trade here is beginning to level off produced a quick change for the better in sentiment this week. It was stated in some quarters that this reverse trend has no doubt been brought about by holiday shopping needs thereby causing the recession to flatten out considerably.

Indications are such that consumption has been slumping more rapidly than production in all lines—fine, course and waste—and this, it is said, accounted for a sharp decline in the inventory position of all these lines. However, it is hoped at the turn of the year that appreciable volume will make it necessary for replacement buying, so far as inventories are concerned.

Fire Destroys 200 Bales of Paper

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 6, 1937.—It was not until late Saturday afternoon, after seventeen hours of steady burning of two hundred bales of paper in one of the storage sheds of the Container Corporation of America in Manayunk, that the smoldering mass of paper was under control. The shed adjoins the main building of the company and extra precautions were taken at 5:50 p.m., on Saturday last when a second alarm was sounded. No one was injured although a wide pall of smoke hovered over the section for many hours.

PAPER TRADE JOURNAL

ESTABLISHED 1872

Reg. U. S. Pat. Off.

George S. Macdonald, Pres. *Joseph P. Horgan, Secy.*
Executive and Editorial Offices, 15 West 47th St., New York, N. Y.

Henry J. Berger
EDITOR

Ronald G. Macdonald
Editor Technical Section

Lynne M. Lamm
Washington Correspondent

Price, Per Copy, 10 Cents — United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. CV · New York, December 9, 1937 No. 24

COMING EVENTS IN THE PAPER INDUSTRY

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

THE DRIVING FORCE OF BUSINESS

In a speech before the Academy of Political Science held in New York, November 11, Secretary of the Treasury Henry Morgenthau said in part: "The basic need today is to foster the full application of the driving force of private capital. We want to see capital go into the productive channel of private industry. We want to see private business expand. We believe that one of the most important ways of achieving these ends at this time is to continue progress toward a balance of the Federal budget."

Now, less than a month later the latest labor reports indicate that approximately 100,000 workers were laid off in October and an estimated 400,000 more in November. As the business recession has now reached a point where concern is felt for the future, how can the "driving force of private capital" be used? There appears to be only one sure means of securing the full cooperation of the business world. It first seems necessary to regain the confidence of all business men before whole-hearted cooperation can be achieved. A good beginning for the Federal Government would be some definite evidence that a serious attempt will be made to curtail expenditures and modify the oppressive burden of taxes.

In the address of Senator Harry F. Byrd, which preceded that of Secretary Morgenthau, the Senator from Virginia said in part: "I want to introduce you to the mysteries of the two-budget system. I declare that our expenses are now being leveled off on the seven billion basis because of the gradual transfer of emergency expenditures to the regular budget. In 1934, the Federal Government adopted the two-budget system, one for emergency and the other for regular expenses. We have two budgets but only one Treasury. In 1934, the regular budget was $2,700,000,000. In 1938, the regular budget is $5,400,000,000—an increase of 100 per cent in four years. To the regular expenses in 1938 of $5,400,000,000, if we add expenditures for recovery and relief, public works, slum clearance, for additional TVA's, for the cost of the new farm program and other projects already recommended or considered, we have reached a seven billion annual expenditure.

"In the budget of 1938 two hundred and thirty millions of social security taxes is used for regular expenses. The effect of this will be to reduce the deficit by the use of a tax collected and paid, for the specific purpose of providing old age security. One can imagine the denunciation a corporation would receive if it indulged in such improper financing and used for current expenses an income dedicated to a trust fund for the security of the aged.

"The huge deficits that have been added to the public debt are not due to failures in the revenue. Taxes have been increased so that in 1938 we anticipate the highest income in the history of our country. As one who has devoted months of study to government spending, assisted by competent experts, I declare advisedly that we have the most costly and wasteful bureaucracy at Washington in the history of the United States of America. Hundreds of millions can be saved in administrative and overhead expenses and simplifying the duplications of government agencies. Other hundreds of millions can be saved by eliminating waste and extravagance from necessary activities and by abolishing altogether the less essential activities. We should and can at once go on a pay as you go basis—not by new taxes, but by retrenchment.

"The excessive high receipts estimated to be received from the undistributed profits tax will never materialize. This new tax system has failed as a revenue producer and has been a decided barrier to business recovery, for this law taxes a corporation an additional 27 per cent for spending current revenue to build new plants and provide new employment. When a main problem of America is unemployment, it is a strange theory to penalize by extra taxation a business enterprise desiring to expand and employ more people. Capital must go to work to carry the present burden of unemployment, but no enterprise can expand and pay a high additional tax penalty for doing so."

The new taxes necessary to finance the continued Federal spending at the rate of seven billions a year

act as a "brake" on industry and trade. In citing the increasing burdens on business imposed since the 1929 depression, the National Association of Manufacturers in a report of a survey submitted to the Congress of American Industry which met in New York this week, said in part: "There has been no lightening of the burden on business from local and State taxation. On the contrary, in that field also there have been numerous increases in the burden imposed on business enterprises both in the imposition of new taxes and in some cases by new administrative interpretations. Much of this increase in the burden which must be borne in the first instance by business enterprise has been probably inevitable, but it is obvious that an increase of this burden which business bears in the first instance cannot go on indefinitely without producing economic effects which will so impede business enterprise that production will not only fail to rise to the point which our present productive capacity could attain, but may actually decline with all the attendant evils of unemployment and a fall in the national income.

"We submit that, if there is a sincere desire to remove all obstructions that today are preventing American industry from producing at its maximum capacity, the first consideration of Congress should be to decrease rather than to increase the tax burden which is borne in the first instance by business enterprise and so to adjust the forms of taxation that they will have the least harmful effects upon its continued expansion to a point of maximum production and employment. All forms of taxes, therefore, which cannot be in general readily absorbed in the costs of doing business, or which tend to retard the growth of business capital necessary to enable our people to produce to their maximum capacity, should be either repealed or amended so as to remove their obstruction to our economic progress."

Election Directed at Luke, Md.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 8, 1937.—The National Labor Relations Board has directed that a collective bargaining election be held within 15 days from the election order among employees of the West Virginia Paper & Pulp Company's plant at Luke, Md.

Workers will choose which, if either, of the two following organizations they wish to represent them: International Brotherhood of Pulp, Sulphite and Paper Mill Workers, Local No. 36, or Employees Protective Association.

Employees eligible to vote are all those on the company's payroll during the week of September 1, 1937, including those furloughed since then but whose names are still on the rolls. Salaried employees will not participate in the voting.

Local 36 filed a petition with the Board October 2, requesting investigation and certification as to the proper collective bargaining agency. A public hearing on the petition was held in Baltimore, November 11, before Trial Examiner Mapes Davison.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3% (c)	76.1%	65.8%	.....
February	90.1% (c)	77.9%	70.0%	.....
March	90.3% (c)	76.0%	70.5%	.....
April	92.1% (c)	82.3%	70.0%	.....
May	90.6% (c)	81.6%	69.4%	.....
June	87.3% (c)	80.7%	72.3%	.....
July	81.8% (c)	77.3%	64.9%	.....
August	82.9% (c)	81.5%	70.9%	.....
September	78.6% (c)	80.5%	71.9%	58.2%
October	73.7% (c)	87.6%	75.6%	64.7%
November	61.0% (c)	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date				
First 47 weeks	83.6%	80.7%	70.4%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*October 23	74.1%		
*October 30	68.8%	October 24	88.2%
*November 6	64.3%	October 31	89.7%
*November 13	61.1%	November 7	87.0%
*November 20	62.6%	November 14	87.6%
*November 27	54.7%	November 21	89.4%
		November 28	87.9%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
Ratio Limits	Oct. 23, 1937	Oct. 30, 1937	Nov. 6, 1937	Nov. 13, 1937	Nov. 20, 1937	Nov. 27, 1937
0% to 50%	103	103	113	146	122	136
51% to 100%	213	216	205	171	183	89
Total Mills Reporting	316	319	318	317	305	225

*Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported by individual companies.

PAPER BOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

Mos.	1937	1936	1935	1934	Mos.	1937	1936	1935	1934
Jan.	80% (e)	61%	61%	....	July	67% (e)	69%	59%	....
Feb.	86% (e)	67%	67%	....	Aug.	74% (e)	75%	65%	....
Mar.	87% (e)	68%	67%	....	Sept.	70% (e)	76%	69%	62%
Apr.	89% (e)	70%	61%	....	Oct.	66% (e)	82%	76%	63%
May	86% (e)	68%	61%	....	Nov.	....	79%	70%	56%
June	75% (e)	68%	65%	....	Dec.	....	74%	60%	52%

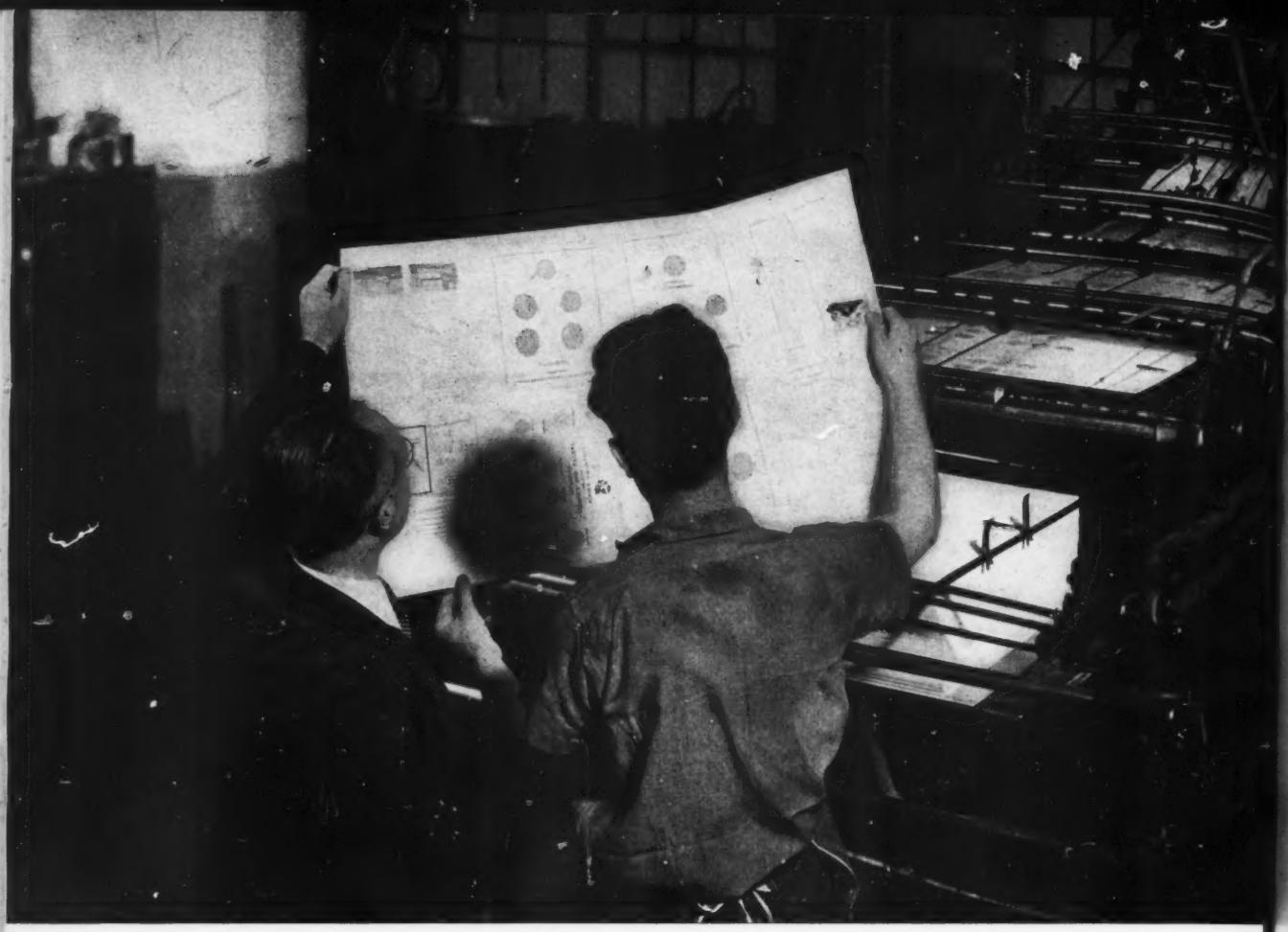
Week end. Oct. 23, 1937—64%
Week end. Oct. 30, 1937—62%
Week end. Nov. 6, 1937—56%
Week end. Nov. 13, 1937—57%
Week end. Nov. 20, 1937—56%
Week end. Nov. 27, 1937—50%

(e) Basic figures revised to include new members of the National Paperboard Assn.

So. Kraft Buys Rockford Plant

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 6, 1937.—From Rockford, Ill., comes the information that the Rockford Fibre Container Corporation of that city has been sold to the Southern Kraft Corporation for an announced sum of $690,500. Under the terms of sale it is stated that the Rockford plant will discontinue the manufacture of paper. It will, however, expand its operations in the making of paper boxes. Ray Wantz, founder and head of the Rockford company and a former president of the Illinois Manufacturers Association is quoted as having said that the establishment of a considerable number of mills close to the source of supply of raw material in the Southern territory has made the manufacture of paper in this locality an unprofitable and uneconomic procedure. The local plant will expand its paper box business with the hope of enlarging it to the point where it will absorb the vacancy created by the ceasing of the paper manufacturing operations.



"Okay"!

And no wonder—for coming through this printer's press is one of those "better" printing jobs done on Zinc Sulphide Pigmented paper. Better because the reproduction of his type and delicate halftones is enhanced by the brilliant whiteness of the paper. Better, too, because the Zinc Sulphide prevents any shadowy "show through" from marring the easy reading, clean cut appearance of his work.

Cryptone and **Albalith** Zinc Sulphide Pigments can be advantageously used in practically all types of white paper. And they offer an economical means of producing more opaque, whiter and brighter papers that will please *everyone*—the dealer, the printer and the consumer.

Our Technical Service Staff will welcome an opportunity to discuss the application of these pigments to your papers.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK

ZINC SULPHIDE PIGMENTS IN PAPE

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Review Of The Paper Industry Literature

Abstracts Compiled By the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman.

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Bleaching

A New Method for Bleaching Ground Wood. Wochbl. Papierfabr. 68, No. 12: 229 (March 20, 1937).—Sodium and calcium bisulphite solutions have a bleaching action although very slow. Zinc and sodium hydrosulphite are more recent bleaching agents but they are rather expensive. The author describes his patent in which the material to be bleached is mixed with zinc dust and the whole treated with sulphur dioxide.—J.F.O.

Process for the Bleaching of Wood Pulp by Treatment With Hydrosulphite. Alois Danninger, Steyrermuhl. Ger. pat. 638,711 (Sept. 3, 1933).—The hydrosulphite is produced in the aqueous suspension of the wood pulp during the manufacturing process by the action of sulphurous acid on zinc dust.—J.F.O.

Dies and Dyeing

Practical Hints for Paper Dyeing. I. G. Farbenindustrie A. G. Papier-Ztg. 62, No. 10: 134-135; No. 11: 148; No. 14: 190-191 (Feb. 3, 6, 17, 1937).—The article is an abstract of the publication "Die Farbstoffe in der Papierindustrie" and describes a suitable arrangement for a color room with recommendations concerning apparatus and convenient location in the paper mill. Quite detailed discussions are given of the correct method of dissolving dyes, the preparation of stock solutions, beater dyeing, cloudiness, its causes and remedies, the relationship between cooking and beating degree and affinity for dyes of stocks, as well as between paper sizing and dyeing, the affinity of fillers for dyes, two-sidedness of dyed paper, and the dyeing of fibers for producing certain mottled effects, with special reference to wool fibers.—C.J.W.

Coloring Paper and Cardboard. Imperial Chemical Industries, Ltd. Fr. pat. 801,557 (Aug. 7, 1936).—Paper and paper boards are colored by the application to the surface of the material of colored finishes such as may be obtained according to Fr. pat. 786,233. An improved appearance and resistance to water may be obtained by the application of additional substances such as aqueous solutions of casein or shellac, or a coating of varnish prepared from a synthetic resin and a cellulose ester or ether, such, for instance, as described in Brit. pat. 320,041.—A.P.-C.

Sizing

Surface Phenomena in the Production of Paper and Cellulose. IV. Methods of Determination of Wettability of (Surfaced Sized) Paper. I. I. Kovalevskii. Bumazhnaya Prom. 15, No. 6: 9-20 (June, 1936); C. A. 31: 2424.—The relation between the degree of sizing and the surface wettability of paper was studied by determining the critical angle of selective wettability on the boundary line of paper-hydrocarbon-water with the aid of a specially constructed apparatus, termed an *ardeometer*. Since this method determines chiefly the surface properties of paper, it is not affected by the thickness of paper as in the case of similar tests by the ink-streak, dry-indicator and other methods, and can be successfully used in testing of heavy and print paper (lithography and offset). The construction and use of the apparatus are illustrated and described.—C.J.W.

Surface Phenomena in the Production of Paper and Cellulose. V. Certain Problems of the Theory and Practice of Sizing. Bumazhnaya Prom. 15, No. 7-8: 48-63 (July-Aug., 1936); C. A. 31: 2424.—The method was applied to the study of various factors determining the wettability (capillarity) in relation to the effectiveness of sizing. Tests of hand-made papers from sulphite, unbleached sulphate, straw and spruce mechanical pulp, and a mixture of 60 per cent wood and 40 per cent kraft, showed that all forms of fibers used in the making of paper are highly hydrophilic; the wettability of mechanical wood pulp is the lowest and that of wool is higher than any vegetable fiber. The selective wettability in most cases is greater on the wire side of paper than on the reverse (top) side. At the same temperatures of drying (20, 90, 125 and 150 deg.) of sized paper, white size causes a greater degree of hydrophobic state than a size containing saponified rosin. Hence, satisfactory sizing is obtained with white size at lower temperatures of drying than with the size without free rosin. The impaired sizing effect produced by calendering of paper is explained by the gradually decreasing hysteresis of wettability with the increasing smoothness of surface. This is caused by the expulsion of air contained in the capillary pores of pulp. To retain a greater resistance to wet-

ting and with it a greater degree of sizing, the smoothing of rough surface of paper by calendering or glazing should be eliminated.—C.J.W.

Sizing, Strength and Deformation of Paper. Ya. G. Khinchin. Bumazhnaya Prom. 15, No. 10: 12-15 (Oct., 1936); C. A. 31:2425.—A discussion, with mathematical treatment of the factors determining the relationship of sizing, strength and deformation of paper, is based on the work of Cobb and Kovalevskii.—C.J.W.

The Use of Wax Emulsions in Surface Sizing Paper and Board. Ralph W. Kumler. Paper Trade J. 104, No. 10: 36-39 (March 11, 1937).—A review of the patents relating to surface sizing with wax and a classification of and comments on the application methods.—A.P.-C.

Manufacture of Starch-Sized Papers. Oscar F. Neitzke, assignor to Bennett, Inc. U. S. pat. 2,072,179 (March 2, 1937).—Prior to incorporation with the paper, starch is subjected to an initial swelling treatment with an alkaline solution and then brought to a substantially neutral state by addition of a suitable acidic reagent.—A.P.-C.

Sizing of Paper, More Particularly Photographic Papers. Société Kodak-Pathé. Fr. pat. 803,728.—A sheet of paper is passed vertically downwards through a steam chamber or chest and then directly through a surface-sizing bath, which may be as concentrated as 6 per cent.—A.P.-C.

Sizing Composition. Ben W. Rowland assignor to Glidden Co. Can. pat. 362,446 (Dec. 8, 1936).—A resin sizing composition is prepared by adding soybean casein in an amount sufficient to react with an alkali resinate and bind the alkali, and adding acidic material to adjust the pH value to not substantially below 7, the resin being liberated in colloid form particularly adapted for deposition on the fiber stock to be sized.—A.P.-C.

Viscosity of Gelatin Solutions and Function of pH in Their Study. M. D. Papeterie 59: 166, 169 (Feb. 25, 1937).—A brief review.—A.P.-C.

Caranauba Wax, Tragacanth and Beef Tallow in the Manufacture of Paper. H. Postl. Wochbl. Papierfabr. 67, No. 41: 766-67 (Oct. 10, 1936).—A short description of the occurrence, treatment and use of caranauba wax, tragacanth and beef fat. The caranauba wax is first saponified, the resulting product is then mixed with solution of potato starch. A size prepared from beef fat and rosin prevents foaming of the stock.—J.F.O.

Sizing Troubles and Mill Water. Paul Hermann. Wochbl. Papierfabr. 68, No. 5: 80-81 (Jan. 30, 1937).—The author recommends checking up the mill water whenever sizing troubles occur; especially when there has been unusual rain storms or high water. Water analyses are given to show the drastic changes which occur. Means of overcoming these difficulties are mentioned.—J.F.O.

Coating Materials

Coatings Used for Chemical Apparatus. K. Wurth. Zellstoff u. Papier 17, No. 3: 113-14 (March, 1937).—The principal uses for coatings are given, then the types of coatings. Oil colors, resin lacquers, chlorinated rubber, cellulose lacquers and bituminous coatings are the most important. In conclusion, the preparation of the base of the material to be coated is discussed.—J.F.O.

Design Coatings on Material Such as Paper, Etc. Edward H. Hough, Jr., assignor to Fabrifax, Ltd. U. S. pat. 2,067,488 (Jan. 12, 1937).—A nondrying oleaginous material such as an oil or grease is applied to a base such as paper or fabric and over this is superimposed, in a predetermined design, a film of coating material of the elastic varnish-enamel type; this film is dried, and there is further superimposed on it a coating film of contrasting color and, after drying to a tacky condition, the combined films are united with a suitable fibrous sheet such as a textile fabric followed by removal of the base on which the films are built.

Coating Surfaces Such as Paper, Etc., With Polymerized Vinyl Derivatives. Camille Dreyfus. U. S. pat. 2,057,671 (Oct. 20, 1936).—There is applied to the surface a composition containing a vinyl compound such as vinyl acetate, partially polymerized to a jelly-like consistency, and an arylphosphate such as tritolyl phosphate in sufficient amounts to produce a flexible coating of high dielectric strength, and the vinyl compound is then further polymerized to form a hard coating.—A.P.-C.

Reducing Dusting in the Manufacture of Coated Paper. Louis C. Fleck, assignor to K. C. M. Co. U. S. pat. 2,072,670 (March 2, 1937).—Dusting is greatly reduced, and in many cases practically eliminated, by keeping the viscosity of the coating liquid substantially constant or uniform, preferably by suitably controlling the temperature of the coating fluid. —A.P.-C.

Coated Paper. Peter A. van der Meulen, assignor to John R. Ditmars. U. S. pats. 2,069,786 and 2,069,787 (Feb. 9, 1937).—*No. 2,069,786*—A moisture-impervious sheet is tub-sized with a solution of a water-insoluble size in an organic solvent, and dried. At least one side of the sized sheet is coated with a film-forming colloid that forms a transparent film, and the latter is polished. *No. 2,069,787*—This invention provides a film-forming colloid composition for use in the preceding patent, and is an improvement on Charles M. Boyce's U. S. pat. 1,978,406. Gelatin is swelled in water, a small quantity of acetic acid is added, followed in turn by a water-soluble salt of a metal belonging to any of the groups of the Periodic System other than Group 1 (suitably calcium nitrate) and a sulphonated oil.—A.P.-C.

Coated Paper and Method of Making. Peter F. Denner, assignor to Kalamazoo Paper Co. U. S. pat. 2,069,648 (Feb. 2, 1937).—Paper is coated on both sides with a mixture preferably composed of 100 parts of clay, 16 parts of casein and 10 parts of wax, the coating on one side being colored with a suitable pigment and on the other side being white. A coating of a "broken down metal oxide" (preferably zinc or tin oxide) with casein and caranauba wax is applied over the white base coating and is polished by passing through a calender or polishing machine. A coating of pyroxylin is applied over the polished metal oxide coating.—A.P.-C.

Pigment Manufacture. Harold R. Rafton, assignor to Raffold Process Corp. U. S. pat. 2,068,039 (Jan. 19, 1937)—A magnesian (preferably dolomitic) lime is slaked with hot water (preferably at or near the boiling point), diluted to a dry solid content of 1 to 2 lbs. per gallon, and treated at a temperature above 60°C. (preferably as near 100°C. as possible) with carbon dioxide until no more carbon dioxide is absorbed. The resultant pigment is suitable as filler or coating for paper and possesses exceptional opacity and can take a high finish.—A.P.-C.

Sulphate Pulping of Longleaf Pine. Effect Of Chemical Wood Ratio on Yield And Quality of Pulp*

By Mark W. Bray[1] J. Stanley Martin[2], and Sidney L. Schwartz[3]

Abstract

Pulping longleaf pine by the sulphate process under identical cooking conditions except for an increase in the ratio of chemical to wood charged between the range of 15 and 25 per cent, results in (1) an increase in the percentage of chemicals consumed, (2) a marked decrease in the total yield of pulp, (3) a marked decrease in screenings, and (4) an increase in the degree of delignification accompanied by large changes in bleachability of the resulting pulps.

At the defiberizing point, a relatively small increase in the percentage of chemicals (1.3 per cent) changes the yield of screenings from high to low with only slight changes in the lignin content of the pulps.

At percentages of total chemicals to wood charged of 18.75 to 20.0 the yield of screened pulp passes through a maximum. Percentages of less than 18.75 result in increased screenings although greater efficiency of chemical utilization is realized. Percentages greater than 20 cause a greater destruction of cellulose than lignin removal.

A consumption of approximately 15 per cent of total chemicals or 13 per cent of effective alkali is critical in effecting defiberization of longleaf pine.

Introduction

Complete information on the effect of the several variables of the alkaline pulping processes is essential to the control of the pulping operation in the production of high quality pulps. This paper presents information obtained at the Forest Products Laboratory through changing the ratio of total chemical to wood charged in the pulping of longleaf pine (*Pinus palustris*). This ratio is one of the important variables of the sulphate process.

Previous investigations[4] indicate that with indirect steam heating a total initial concentration of 50 grams per liter of chemicals[5] in the cooking liquor results in a maximum yield of screened pulp and a minimum yield of screenings. The total initial concentration of chemicals in the pulping experiments here described was therefore maintained at 50 grams per liter. The ratio of total chemical to wood was decreased in small increments from 25 to 15 pounds per hundred pounds of oven-dry wood charged. With the exception of the liquor wood ratio, which, under the circumstances, becomes a dependent variable, all other conditions of digestion including the ratio of 2 parts caustic to 1 part sulphide were maintained the same for all the pulping experiments. The volume of liquor, including the moisture in the chips charged, was, therefore, proportionally decreased from 60 to 36 gallons per hundred pounds of oven-dry wood. The period of temperature-pressure increase and the duration at maximum temperature (170 deg. C.) were both 1½ hours, making a total digestion period of 3 hours.

Material

The wood used for the pulping experiments consisted of the entire bole of a rapid, second-growth longleaf pine tree from Pearl River Parish, Mississippi. The tree was selected from an open cut-over stand of longleaf pine situated on the top of a hill. The tree was cut into seven 5-foot bolts which were numbered consecutively from the base to the top. All bolts were painted on the ends with a chemical to prevent blue staining and with hardened gloss oil to retard moisture losses in transit and shipped to the Forest Products Laboratory, Madison, Wis. They were received at the Laboratory during the same month in which they were cut and were immediately evaluated as to physical properties (Table I). The average growth rate of the tree was 4.2 rings per inch and the average springwood content was 60 per cent by volume.

TABLE I.—PHYSICAL PROPERTIES OF LONGLEAF PINE PULPWOOD—ONE TREE[1]

Property	Log and disc[2] number							
	1	2	3	4	5	6	7	7 top disc
Relative height, above stump, per cent	0	14	29	43	57	71	86	100
Age, years	21	18	16	14	13	11	9	7
Nonvolatile, per cent	54.1	50.6	57.8	48.0	44.6	53.5	52.3	45.2
Density, pounds per cubic foot	35.9	33.8	31.4	30.0	29.1	27.2	27.0	24.5
Springwood content, per cent	43	51	55	60	62	66	66	77
Heartwood content, per cent	0.5	0.2	0.4	0	0	0	0	0
Rate of growth, rings per inch	4.6	4.5	4.1	3.9	4.0	3.7	4.0	4.5
Diameter of disc, inches	9.2	8.0	7.8	7.2	6.5	5.9	4.5	3.1
Length of log, feet-inches	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2

[1] Total height of tree, 54 feet; height to first branch, 20 feet; width of crown, 20 feet.
[2] All discs taken from the lower end of bolt unless otherwise stated.

The seven bolts, which represented the entire merchantable bole of the tree, were hand-peeled and chipped. The chips were screened on a shaker screen where the over- and under-sized material, knots, and sawdust were rejected. The chips were thoroughly mixed and stored until used in air-tight cans placed in a room maintained at 40 deg. F. and 93 per cent

* Presented (by title) at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, DeSoto Hotel, Savannah, Ga., Oct. 18-21, 1937.

[1] Member TAPPI, Senior Chemist, Forest Products Laboratory, Forest Service, U. S. Dept. of Agriculture, Madison, Wis.

[2] Member TAPPI, Associate Engineer, Forest Products Laboratory.

[3] Member TAPPI, Asst. Engineer, Forest Products Laboratory.

[4] M. W. Bray, Sulphate pulping of silver fir. Effect of chemical concentration and wood selection on yield and pulp quality. Forest Products Laboratory typewritten report. Problem A-157.

[5] Calculated as follows: Sodium hydroxide 33.3 grams per liter; and sodium sulphide 16.7 grams per liter.

TABLE II.—SULPHATE PULPING OF LONGLEAF PINE (PINUS PALUSTRIS)—(EFFECT OF CHEMICAL-WOOD RATIO ON YIELD AND PULP PROPERTIES) (SHIPMENT 1469)

Digestion designation, Number	Wood: Moisture, per cent	Wood: Weight: Moist, pounds	Wood: Weight: Oven-dry, pounds	Cooking[1] and yield data: Chemicals: Charged: Per 100 pounds O.D. wood: NaOH, pounds	NaOH, pounds	Na2S, pounds	Total, pounds	Total effective as NaOH, pounds	Volume, gallons	Liquor-wood ratio, ratio	Chemicals: Consumed: Ratio of combined to total alkali, per cent	On oven-dry wood, per cent	Total effective alkali as NaOH, per cent	Black liquor: Density at 15 deg. C., deg. B.	Total solids, per cent	Heat value per pound O.D. residue, b.t.u.	Yield O.D. pulp: Screened pulp, per cent	Screenings, per cent	Total, per cent
AUTOCLAVE DIGESTIONS																			
655)	44.0	7.15	4.0	16.67	8.33	25.0	20.94	60.0	5.0		76.2	19.1	16.0	11.5	15.7	5875	45.9	0	45.9
656)											76.2	19.1	16.0	11.5			46.4	.1	46.7
657)											76.2	19.1	16.0	11.5			46.3	.1	46.4
(Average											76.2	19.1	16.0	11.5			46.3	.1	46.4)
658)	43.9	7.13	4.0	15.00	7.50	22.5	18.85	54.0	4.5		81.9	18.4	15.4	11.8	16.0	6126	47.2	.3	47.5
659)											82.3	18.5	15.5	11.8			47.0	.3	47.3
660)											82.3	18.5	15.5	11.7			47.1	.2	47.3
(Average											82.2	18.5	15.5	11.8			47.1	.3	47.4)
661)	44.1	7.15	4.0	13.33	6.67	20.0	16.75	48.0	4.0		86.6	17.3	14.5	11.9	16.8	6300	48.6	.6	49.2
662)											86.6	17.3	14.5	11.9			48.2	.7	48.9
663)											86.6	17.3	14.5	12.0			48.4	.7	49.1
(Average											86.6	17.3	14.5	11.9			48.4	.7	49.1)
676)	44.1	7.16	4.0	12.50	6.25	18.75	15.71	45.0	3.75		90.0	16.9	14.1	10.7	16.0	7035	47.7	2.7	50.4
677)											89.5	16.8	14.1	10.7			48.4	2.0	50.4
678)											89.5	16.8	14.1	10.7			48.7	2.4	51.1
(Average											89.7	16.8	14.1	10.7			48.3	2.4	50.6)
673)	43.7	7.10	4.0	11.67	5.83	17.5	14.66	42.0	3.5		90.9	15.9	13.3	11.5	16.5	6745	47.8	4.2	52.0
674)											90.9	15.9	13.3	11.3			47.4	4.2	51.6
675)											90.9	15.9	13.3	11.3			47.1	4.7	51.8
(Average											90.9	15.9	13.3	11.4			47.4	4.4	51.8)
667)[3]	43.7	7.10	4.0	11.67	5.08	16.75	14.28	42.0	3.5		91.2	15.3	13.0	11.0	16.4	6797	45.4	7.2	52.6
668)											91.2	15.3	13.0	11.0			45.1	8.1	53.2
669)											90.7	15.2	13.0	11.0			45.0	7.2	52.2
(Average											91.0	15.3	13.0	11.0			45.2	7.5	52.7)
670)	43.9	7.13	4.0	10.00	5.00	15.0	12.57	36.0	3.0		93.3	14.0	11.7	11.2	17.0	6827	8.4	49.7	58.1
671)											93.3	14.0	11.7	11.2			7.9	50.5	58.4
672)											93.3	14.0	11.7	11.1			8.7	49.7	58.4
(Average											93.3	14.0	11.7	11.2			8.3	50.0	58.3)
SEMICOMMERCIAL DIGESTIONS																			
2456	45.8	184.6	100.0	16.67	8.33	25.0	20.94	60.0	5.0		70.4	17.6	14.7	10.4	14.9	6405	46.0	0	46.0
2457	45.7	184.2	100.0	16.67	8.33	25.0	20.94	60.0	5.0		71.8	18.0	15.0	11.8	14.3	6376	46.7	0	46.7
2458	44.9	181.5	100.0	16.67	8.33	25.0	20.94	60.0	5.0		69.0	17.3	14.5	11.2	16.2	6363	46.9	0	46.9

[1] With the exception of digestions 2456, 2457, and 2458, which were made in a 13-cubic foot rotary digester, all digestions were made in 3.7-gallon, spherical, rotary autoclaves. Indirect steamheating was used throughout.

The cooking conditions other than those shown are as follows:

Concentration of cooking chemicals at the start:
- Sodium hydroxide (calculated as NaOH). 33.33 grams per liter
- Sodium sulphide (calculated as Na2S)..... 16.67 grams per liter
- Total chemicals ..... 50.00 grams per liter

Maximum digestion temperature..... 170 deg. C.
Temperature-pressure increase period..... 1½ hours
Duration at maximum temperature..... 1½ hours

[2] Pulp bleached in three stages with elemental chlorine and calcium hypochlorite.

[3] Concentration of Na2S was 14.5 grams per liter; total concentration 47.8 grams per liter.

TABLE II.—SULPHATE PULPING OF LONGLEAF PINE (PINUS PALUSTRIS)—(EFFECT OF CHEMICAL-WOOD RATIO ON YIELD AND PULP PROPERTIES). (SHIPMENT 1469)—(Continued)

Digestion designation Number	Time of treatment, Min.	Test beater strength data on unbleached pulps—Tests made at 72 deg. F. and 65 per cent relative humidity: Freeness (Schopper) (1) Cc.	Freeness (Schopper) (2) Cc.	Ream wt. (25x40—500) (1) Pounds	Ream wt. (25x40—500) (2) Pounds	Burst factor (1) Pts./lb./ream	Burst factor (2) Pts./lb./ream	Tear factor (1) Pts./lb./ream	Tear factor (2) Pts./lb./ream	Tensile strength (1) Pounds/sq. in.	Tensile strength (2) Pounds/sq. in.	Solid fraction (1) Ratio	Solid fraction (2) Ratio	Stretch (1) Per cent	Stretch (2) Per cent	Bleach requirement: Standard bleach added Per cent	Ives reading: Red, Parts	Ives reading: Green, Parts	Ives reading: Blue, Parts	Chemical analysis: Cellulose Total, Per cent	Cellulose Alpha, Per cent	Lignin, Per cent	Total pentosans, %	Chlorine No. (Roe) %
AUTOCLAVE DIGESTIONS																								
655)	0	890	890	...	...	...	...	...	...	...	...	...	...	...	...	0	40	30	24	94.3	78.8	2.3	8.7	4.3
656)	20	860	870	52.0	56.7	0.89	0.95	2.3	2.5	4230	3770	0.39	0.39	4.8	5.5	15	74	58	46					
657)	40	785	795	51.2	53.5	1.19	1.24	2.3	2.4	4780	5600	.41	.42	5.8	6.8	20	82	70	57					
	60	610	620	53.5	52.2	1.36	1.32	2.3	2.0	7280	6430	.45	.45	5.8	6.0	22.5	83	73	63					
	80	400	420	52.8	52.8	1.38	1.44	1.9	2.0	7750	7180	.47	.47	5.5	6.0	25	85	78	68					
																30	87	82	75					
																31.4[2]	91	89	84					
658)	0	895	895	...	...	...	...	...	...	...	...	...	...	...	...	0	38	27	22	93.0	76.8	3.9	9.5	4.9
659)	20	865	870	55.1	57.1	.85	.87	2.6	2.5	3790	3730	.38	.37	4.6	5.2	15	66	48	36					
660)	40	795	795	55.1	53.2	1.13	1.13	2.4	2.3	4905	5270	.41	.41	6.1	5.2	20	72	59	44					
	60	600	610	52.8	54.3	1.22	1.23	2.2	2.1	6120	7070	.43	.43	6.0	5.8	22.5	78	65	53					
	80	380	400	54.7	55.1	1.31	...	2.2	2.2	7160	7070	.45	.45	5.4	5.2	25	79	67	59					
																30	82	76	65					
																31.4[2]	92	88	83					
661)	0	895	895	...	...	...	...	...	...	...	...	...	...	...	...	0	36	25	19	94.0	78.3	4.7	8.8	5.6
662)	20	870	870	54.7	56.3	.83	.86	2.4	2.4	3650	4350	.35	.37	4.5	6.7	20	67	50	37					
663)	40	800	795	54.3	56.3	1.06	1.10	2.4	2.2	5110	5280	.41	.41	7.0	5.2	25	75	60	45					
	50	725	715	52.8	55.1	1.16	1.18	2.1	2.2	6340	5660	.41	.42	7.3	5.2	30	79	67	53					
	60	620	620	55.1	55.5	1.19	1.23	2.2	2.1	6680	6900	.44	.46	6.6	6.0	40	86	80	72					
	70	470	450	52.0	54.0	1.24	1.28	2.0	1.9	7200	6650	.44	.44	4.8	6.4	31.4[2]	89	84	74					
	80	365	355	52.8	54.0	1.29	1.30	2.0	2.0	7320	8120	.46	.47	4.8	6.0									
676)	0	905	905	...	...	...	...	...	...	...	...	...	...	...	...	0	34	23	18	90.4	78.0	6.9	11.2	8.1
677)	20	880	880	58.3	56.7	.65	.67	2.6	2.8	2435	2678	.29	.34	7.4	5.5	25	64	48	34					
678)	40	865	865	54.3	54.3	.97	1.01	2.6	2.5	4160	4180	.38	.41	5.9	6.0	30	..	..	..					
	60	825	835	55.5	57.5	1.13	1.09	2.4	2.6	5130	5120	.36	.43	7.2	7.8	35	73	59	47					
	80	760	775	56.7	56.7	1.17	1.18	2.4	2.4	5239	5280	.41	.44	7.0	7.0									
	100	665	700	54.7	55.1	1.26	1.26	2.3	2.5	6460	7510	.42	.46	6.6	6.0									
	120	555	580	53.9	53.9	1.31	1.32	2.2	2.1	7760	7620	.45	.47	6.0	6.5									
	140	455	475	53.9	53.5	1.34	1.32	2.1	1.9	7268	7420	.45	.47	6.0	6.2									
	160	355	370	53.9	52.0	1.29	1.38	1.9	2.1	6895	7120	.47	.49	5.8	5.2									
673)	0	900	900	...	...	...	...	...	...	...	...	...	...	...	...	0	33	23	19	90.6	77.2	7.6	10.8	6.1
674)	20	885	885	50.0	51.2	.71	.71	2.4	2.4	3085	2320	.35	.34	6.0	5.5	25	53	36	25					
675)	40	865	860	50.0	52.4	.95	.98	2.3	2.3	4390	4400	.39	.39	6.8	7.4	35	67	50	36					
	60	815	805	50.0	50.4	1.13	1.08	2.2	2.2	5700	6010	.44	.42	5.4	6.1									
	80	720	710	51.6	54.3	1.22	1.22	2.0	2.1	5810	6300	.45	.45	5.9	6.5									
	100	565	560	50.4	51.2	1.25	1.24	1.9	2.1	7170	6400	.47	.46	6.3	5.3									
	120	420	410	50.4	51.2	1.29	1.28	1.8	1.8	8070	7120	.49	.49	5.8	5.0									
667)[3]	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	33	21	18	87.8	72.8	9.1	10.5	10.3
668)	20	885	880	59.1	57.9	.66	.69	2.5	2.7	2460	2790	.34	.33	5.5	5.6	25	53	35	24					
669)	40	855	860	58.3	57.5	.94	.96	2.3	2.4	3965	4230	.38	.39	7.0	7.1									
	60	805	810	57.5	57.5	1.08	1.09	2.3	2.3	5550	5380	.43	.41	6.8	6.3									
	80	685	710	55.9	57.5	1.22	1.18	2.2	2.0	7700	6240	.46	.44	6.8	6.3									
	100	530	570	57.5	56.7	1.25	1.22	1.9	2.0	7180	7510	.46	.45	6.1	5.4									
	120	390	425	57.9	57.5	1.28	1.35	1.9	1.9	8000	7350	.48	.46	5.4	5.6									
670)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	84.6	72.3	12.8	10.9	13.6
671)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...									
672)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...									
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...									
SEMICOMMERCIAL DIGESTIONS																								
2456	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	43	36	30	95.7	81.6	2.9	8.9	4.0
	20	865	865	54.7	54.3	.93	1.04	2.7	2.6	4630	4370	.39	.37	7.4	6.5	20	80	72	65					
	40	825	825	51.9	52.8	1.14	1.19	2.4	2.4	6360	5500	.45	.41	6.5	7.3	22.5	81	75	67					
	60	765	755	53.4	52.4	1.21	1.35	2.4	2.3	6700	6660	.46	.43	9.5	7.5	25	84	80	73					
	80	655	645	53.5	52.8	1.32	1.43	2.0	2.1	8310	6870	.49	.44	5.8	5.8	30	87	85	78					
	100	535	525	52.8	51.6	1.40	1.43	2.2	2.1	9080	7700	.50	.46	5.5	6.8									
	120	420	400	52.0	51.6	1.44	1.47	2.0	1.8	9370	9000	.53	.47	7.1	5.8									
2457	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	48	33	30	94.6	81.2	4.1	10.0	5.1
	20	865	860	57.5	55.1	.88	.86	2.9	2.6	3795	3890	.37	.35	7.3	6.3	20	73	62	52					
	40	835	840	56.7	56.3	1.18	1.20	2.5	2.4	5770	5140	.41	.39	7.4	6.8	22.5	80	68	57					
	60	775	780	56.7	55.1	1.25	1.29	2.3	2.4	6150	6870	.45	.42	6.6	6.8	25	80	70	58					
	80	675	710	55.1	55.5	1.36	1.35	2.2	2.2	6950	7140	.46	.42	7.1	7.0	30	80	74	65					
	100	570	600	58.3	52.8	1.36	1.46	2.1	2.0	8060	7540	.47	.45	6.0	6.8									
	120	455	490	53.9	52.8	1.44	1.48	2.1	2.0	8140	8540	.49	.45	6.4	7.0									
	140	375	390	54.7	53.9	1.47	1.49	2.0	2.1	8980	9580	.50	.47	5.9	5.8									
2458	0	885	885	...	...	...	...	...	...	...	...	...	...	...	...	0	47	36	28	94.4	80.4	3.6	9.5	4.6
	20	865	865	54.3	55.1	.79	.77	3.1	2.9	3440	3410	.34	.39	6.5	6.8	20	79	69	59					
	40	840	835	55.5	56.3	1.13	1.02	2.6	2.8	5510	5280	.41	.41	7.4	7.0	22.5	81	71	61					
	60	800	805	52.8	54.7	1.22	1.17	2.5	2.5	6420	6400	.43	.44	5.9	6.8	25	81	75	62					
	80	715	750	53.9	55.5	1.31	1.25	2.3	2.4	6840	7100	.45	.46	6.8	7.3	30	84	80	76					
	100	625	655	55.5	54.3	1.35	1.32	2.3	2.1	7170	7460	.45	.47	6.8	7.0									
	120	525	550	52.0	55.1	1.38	1.31	2.2	2.1	7980	7380	.47	.49	6.0	5.3									
	140	435	460	52.0	52.0	1.36	1.36	2.0	2.2	8390	8290	.48	.50	6.8	5.8									
	160	350	370	52.8	52.8	1.39	1.40	1.8	2.0	8300	8260	.50	.50	5.9	5.5									

relative humidity. Prior to pulping the chips were sampled for moisture content.

Pulping Experiments

A total of 21 digestions were made in which the ratio of chemical to wood was decreased in small increments from 25 to 15 pounds per hundred pounds of oven-dry wood charged. All digestions were made in triplicate in spherical, rotary autoclaves of 3.7-gallon capacity provided with jackets for indirect steam heating. A uniform increase in the temperature-pressure rate for 1½ hours from 25 to 170 deg. C. was employed. After the digestions had been held at the maximum temperature for 1½ hours, the jacket steam pressure was released and the autoclaves were allowed to cool for approximately 15 minutes. The pulped chips were then dumped on wire screens and washed to remove superficial spent liquors, after which they were broken up by rapid agitation in a small vat. The pulps were next thoroughly washed to remove the remaining spent liquors, and then screened through a 12-cut flat screen. The screened pulps were pressed to approximately 33 per cent oven-dryness, sampled for moisture, and weighed in closed vessels for the determination of yield. In order to have ample pulp for duplicate physical and chemical tests, the triplicate digestions were combined by reagitation in water suspension, again pressed to 33 per cent oven-dryness, and stored in air-tight cans until tested.

All calculations of chemicals and yield were based on the calculated weight of oven-dry chips charged. Bleach consumption and the results of chemical analysis, on the other hand, were calculated on the weight of oven-dry pulp tested. In calculating the concentration of chemicals and the volume of the cooking liquors added, cognizance was taken of the moisture in the chips and the figures reported, therefore, include this water. The results obtained from the pulping experiments, together with those obtained from the physical and chemical tests are recorded in Table II. Table III, which is based upon strength-freeness data, compares the pulps at equal degrees of beating.

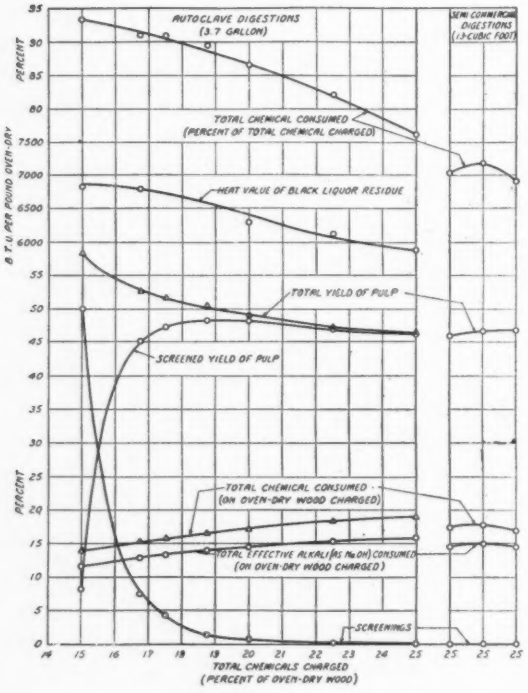

AUTOCLAVE DIGESTIONS (3.7 GALLON)
SEMI-COMMERCIAL DIGESTIONS (13-CUBIC FOOT)
TOTAL CHEMICAL CONSUMED (PERCENT OF TOTAL CHEMICAL CHARGED)
HEAT VALUE OF BLACK LIQUOR RESIDUE
TOTAL YIELD OF PULP
SCREENED YIELD OF PULP
TOTAL CHEMICAL CONSUMED (ON OVEN-DRY WOOD CHARGED)
TOTAL EFFECTIVE ALKALI (AS Na2O) CONSUMED (ON OVEN-DRY WOOD CHARGED)
SCREENINGS
PERCENT
B.T.U. PER POUND OVEN-DRY
TOTAL CHEMICALS CHARGED (PERCENT OF OVEN-DRY WOOD)

FIG. 1.

Effect of chemical ratio on yield of pulp and chemicals consumed in the pulping of longleaf pine by the sulphate process.

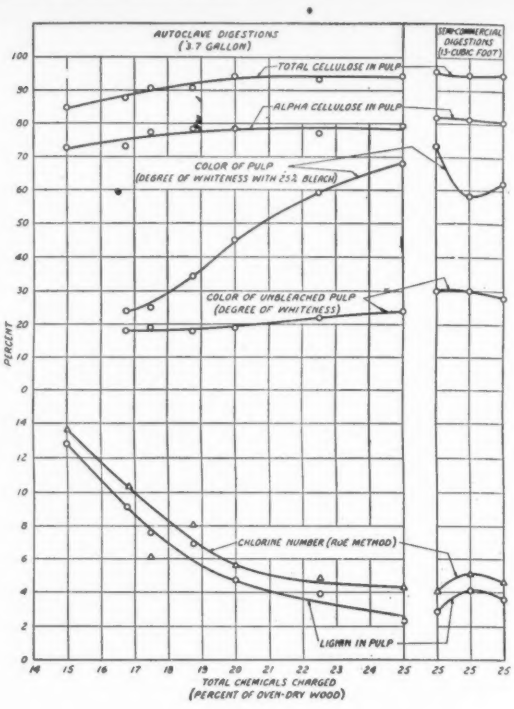

AUTOCLAVE DIGESTIONS (3.7 GALLON)
SEMI-COMMERCIAL DIGESTIONS (13-CUBIC FOOT)
TOTAL CELLULOSE IN PULP
ALPHA CELLULOSE IN PULP
COLOR OF PULP (DEGREE OF WHITENESS WITH 2% BLEACH)
COLOR OF UNBLEACHED PULP (DEGREE OF WHITENESS)
CHLORINE NUMBER (RUE METHOD)
LIGNIN IN PULP
PERCENT
TOTAL CHEMICALS CHARGED (PERCENT OF OVEN-DRY WOOD)

FIG. 2.

Effect of chemical ratio on pulp properties in the pulping of longleaf pine by the sulphate process.

METHOD OF TESTING THE PULPS

The strength properties of the pulps were determined on test sheets prepared after processing 360-gram (oven-dry basis) portions of pulp in 23 liters of water for definite intervals in a 1½-pound standard test beater provided with a 6,500-gram weight on the bedplate. Bleaching tests were made on the pulps by treating 15-gram samples by a single-stage method with known amounts of bleaching powder solutions. The color of the bleached and unbleached pulps was determined by comparison with a standard white magnesia block in an Ives tint photometer. Samples of the unbleached pulps were analyzed for their cellulose, alpha-cellulose, lignin, pentosan contents, and chlorine absorbing power according to standard methods of the Forest Products Laboratory.

For comparative purposes, three semicommercial digestions in addition to the foregoing autoclave digestions were made with 25 per cent total chemicals in a 13 cubic-foot digester heated with indirect steam. The results of these digestions are also included in Tables II and III.

Results and Discussions

YIELD AND CHEMICAL CONSUMPTION

According to the data reported in Table II, increasing the ratio of chemical to wood between the limits of 15 and 25 per cent results in (1) an in-

TABLE III.—INTERPOLATED BEATER STRENGTH DATA ON LONGLEAF PINE SULPHATE PULPS
EFFECT OF CHEMICAL-WOOD RATIO ON YIELD AND PULP PROPERTIES
(Shipment 1469)

Digestion designation No.	Cooking [1] and yield data: Chemicals charged: Total concentration Grams/liter	Per 100 lbs. O.D. wood: Total NaOH and Na_2S, Pounds	Total effective alkali as NaOH, Pounds	Volume of liquor, Gallons	Yield: Screened pulp, Per cent	Screenings, Per cent	Total Per cent	Test beater strength data on unbleached pulp. Tests made at 72 deg. F. and 65 per cent relative humidity: Freeness (Schopper) Cc.	Beating degree (S.-R.)	Beating time, Min.	Burst factor, Pts. per pound per ream	Tear factor, Pts. per pound per ream	Tensile strength, Lbs. per square inch	Solid fraction, Ratio	Ives blue reading with 25 per cent standard bleach powder, Parts
								AUTOCLAVE DIGESTIONS							
655)	50.0	25.0	20.94	60.0	45.9	0.0	45.9	850	15	25	1.02	2.4	4450	0.40	68
656)					46.4	.1	46.7	825	17.5	33	1.13	2.3	4900	.41	
657)					46.3	.1	46.4	800	20	38	1.18	2.3	5250	.42	
(Average					46.3	.1	46.4)	750	25	46	1.26	2.2	5700	.43	
								700	30	53	1.30	2.1	6100	.44	
								600	40	64	1.35	2.1	6700	.45	
								550	45	68	1.37	2.0	6950	.46	
658)	50.0	22.5	18.85	54.0	47.2	.3	47.5	850	15	27	.98	2.5	4200	.38	59
659)					47.0	.3	47.3	825	17.5	33	1.05	2.4	4700	.40	
660)					47.1	.2	47.3	800	20	40	1.10	2.4	5000	.40	
(Average					47.1	.3	47.4)	750	25	47	1.16	2.3	5500	.42	
								700	30	53	1.20	2.3	5850	.43	
								600	40	64	1.25	2.2	6400	.44	
								550	45	68	1.26	2.1	6650	.44	
661)	50.0	20.0	16.75	48.0	48.6	.6	49.2	850	15	26	.92	2.4	4400	.38	45
662)					48.2	.7	48.9	825	17.5	34	1.00	2.3	4850	.39	
663)					48.4	.7	49.1	800	20	38	1.05	2.3	5200	.40	
(Average					48.4	.7	49.1)	750	25	46	1.13	2.2	5700	.42	
								700	30	52	1.18	2.2	6100	.43	
								600	40	61	1.22	2.1	6700	.44	
								550	45	65	1.24	2.1	6950	.45	
676)	50.0	18.75	15.71	45.0	47.7	2.7	50.4	850	15	50	1.05	2.6	4300	.39	34
677)					48.4	2.0	50.4	825	17.5	60	1.10	2.5	5000	.41	
678)					48.7	2.4	51.1	800	20	68	1.14	2.4	5450	.42	
(Average					48.3	2.4	50.6)	750	25	82	1.20	2.3	6100	.43	
								700	30	93	1.24	2.2	6600	.44	
								600	40	114	1.29	2.1	7300	.46	
								550	45	122	1.31	2.1	7500	.46	
673)	50.0	17.5	14.66	42.0	47.8	4.2	50.2	850	15	46	1.01	2.3	4800	.39	25
674)					47.4	4.2	51.6	825	17.5	54	1.08	2.2	5500	.41	
675)					47.1	4.7	51.8	800	20	60	1.13	2.1	5900	.43	
(Average					47.4	4.4	51.8)	750	25	72	1.19	2.1	6100	.44	
								700	30	82	1.22	2.0	6200	.45	
								600	40	96	1.26	1.9	6600	.46	
								550	45	102	1.27	1.9	6800	.47	
667)	47.8 [2]	16.75	14.28	42.0	45.4	7.2	52.6	850	15	46	.97	2.4	4200	.38	24
668)					45.1	8.1	53.2	825	17.5	55	1.05	2.3	5100	.40	
669)					45.0	7.2	52.2	800	20	61	1.09	2.3	5600	.42	
(Average					45.2	7.5	52.7)	750	25	71	1.15	2.2	6300	.44	
								700	30	80	1.19	2.1	6700	.45	
								600	40	93	1.24	2.0	7200	.46	
								550	45	100	1.26	2.0	7400	.46	
670)	50.0	15.0	12.57	36.0	8.4	49.7	58.1	No tests							
671)					7.9	50.5	58.4								
672)					8.7	49.7	58.4								
(Average					8.3	50.0	58.3)								
2456	50.0	25.0	20.94	60.0	46.0	0	46.0	850	15	31	1.09	2.5	5300	.41	73
								825	17.5	42	1.17	2.4	5800	.42	
								800	20	49	1.22	2.4	6200	.43	
								750	25	60	1.28	2.3	6750	.45	
								700	30	70	1.32	2.2	7200	.46	
								600	40	87	1.38	2.1	8000	.47	
								550	45	95	1.41	2.0	8400	.48	
2457	50.0	25.0	20.94	60.0	46.7	0	46.7	850	15	36	1.04	2.6	5100	.37	58
								825	17.5	46	1.19	2.5	5700	.41	
								800	20	54	1.24	2.4	6000	.42	
								750	25	67	1.31	2.3	6600	.44	
								700	30	78	1.35	2.2	7000	.45	
								600	40	98	1.41	2.1	7700	.46	
								550	45	106	1.43	2.0	8000	.47	
2458	50.0	25.0	20.94	60.0	46.9	0	46.9	850	15	36	1.03	2.8	4700	.39	62
								825	17.5	48	1.13	2.6	5600	.41	
								800	20	57	1.19	2.5	6100	.42	
								750	25	72	1.26	2.4	6750	.44	
								700	30	85	1.30	2.3	7100	.46	
								600	40	108	1.35	2.2	7600	.47	
								550	45	118	1.36	2.1	7900	.48	

[1] The cooking conditions other than those shown are as follows:
Concentration of cooking chemicals at start—
Sodium hydroxide (calculated as NaOH)... 33.33 grams per liter
Sodium sulphide (calculated as Na_2S)..... 16.67 grams per liter
Total chemicals..... 50.00 grams per liter
[2] Concentration of Na_2S was 14.5 grams per liter.

crease in the percentage of chemicals consumed, (2) a marked decrease in the total yield of pulp, (3) a marked decrease in screenings, and (4) an increase in degree of delignification. (See Figs. 1 and 2).

While the actual amount of chemicals consumed increases as the percentage charged is increased, the efficiency of consumption shows a fairly constant rate of decrease. For example, with 15 per cent charged (Table II, digestions 670-1-2), 93 per cent of it is consumed, whereas with 25 per cent charged (Table II, digestions 655-6-7) only 75 per cent is consumed.

The yield of screened pulp appears to pass through a maximum within the range of 18.75 to 20 per cent total chemicals charged. Less chemical than 18.75 per cent although greater efficiency of utilization is real-

ized, results in increased screenings. The addition of more chemical than 20 per cent results in a greater degree of cellulose destruction than of lignin removal.

It is of interest to note that, although 93.3 and 91.0 per cent of the total chemicals added in the 15 and 16.75 per cent digestions (Table II, digestions 670-1-2; digestions 677-8-9), respectively, is consumed the screenings decrease from 50.0 to 7.5 per cent of the weight of the oven-dry wood charged. The 1.3 per cent differential of chemical consumed to wood charged exerts a marked influence in defiberizing the wood chips. A consumption of approximately 15 per cent of total chemicals or 13 per cent effective alkali (sodium hydroxide) is critical in affecting defiberization of this species. Less consumption of chemical results in a disproportionate amount of screenings, while slightly more (1.5 per cent) results in a marked increase in screened pulp, mainly at the expense of screenings.

Physical (Strength) Properties of Pulps

The strength properties of the resulting pulps developed in the beater all fall in practically the same category. Very little differences resulted from varying the chemical-wood ratio between the limits investigated. The pulp prepared with 25 per cent total chemicals gave the highest bursting strength. There was some difference, however, in the rate of beating. As shown from the Schopper-Riegler freeness figures, the pulps prepared with 25, 22.5 and 20 per cent of chemical developed their strengths (decreased in freeness) much more rapidly than the rawer pulps cooked with the lower chemical ratios.

Chemical Properties of the Pulps

Although none of the unbleached pulps was very light in color, the whiteness value (Ives blue reading) increases from 18 to 24 as the chemical ratio is increased from 16.8 to 25 per cent (Fig. 2). No color readings or bleaching tests were made on the pulp made with 15 per cent total chemicals. As the color of the unbleached pulps brightens the bleach requirement decreases. With 25 per cent of bleaching agent the degree of whiteness resulting from a treatment increases in an almost linear manner from 24 to 68 parts blue between the limits investigated. Considerable improvement over the single-stage treatment will be noted for the pulps made with 25 to 22.5 per cent of chemical, respectively, when bleached in three-stages with chlorine water and calcium hypochlorite. The results obtained for the Roe chlorine number (Fig. 3) are in line with those obtained for bleach requirement in that both are proportional to the degress of delignification or to the purity of the pulps as measured by chemical analysis.

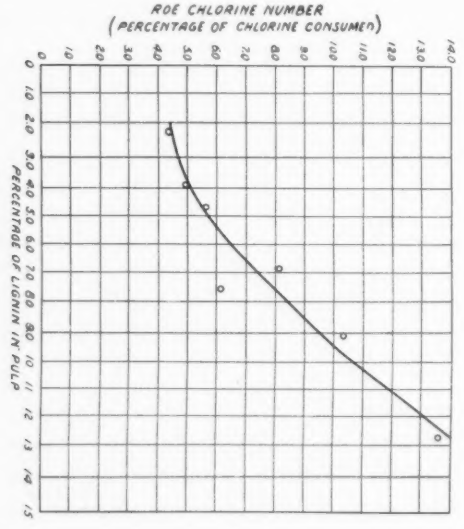


Fig. 3.

Relation between Roe chlorine number and lignin content of longleaf pine sulphate pulps.

TAPPI Notes

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry will meet at the Engineers Club, Philadelphia, Pa., Friday, December 10, 1937 at 6:30 P.M. The speaker will be George J. Ritter, Forest Products Laboratory, Madison, Wis., who will talk on "Physical and Chemical Properties of Holocellulose."

W. K. McLeod formerly of the Anglo-Newfoundland Pulp and Paper Company is now with the Spruce Falls Pulp and Paper Company, Kapuskasing, Ont.

H. C. Schwalbe formerly Research Director of Dill & Collins Inc., Philadelphia, is now with the Mead Corporation, Chillicothe, Ohio.

H. Stanley Hodgson formerly Chemist for Watson's of Bullinfield Ltd., Dundee, Scotland, is now with the India Paper Pulp Company Ltd., Naihati, Calcutta, Bengal, India.

C. F. Clarkson, formerly vice president of the International Printing Ink Corp., is now President of Charles Hellmuth Inc., which has recently been combined with the United Printing Ink Corp.

The Ohio Section of TAPPI will meet (probably at the Anthony Wayne Hotel), Hamilton, Ohio, on January 8, 1938. The speakers will be R. M. Diehm of Rohm & Haas Company, Bristol, Pa., who will talk on "Enzymes," and Clarke Marion, Vice President and Production Manager of the Champion Paper and Fibre Company.

F. L. Simons Joins La Monte & Son

George La Monte & Son, of Nutley, N. J., announce that Dr. Francis L. Simons, until recently Research Director of Skinner & Sherman, Inc., is now associated with their organization as technical director.

Dr. Simons is a Brown graduate, holds his advanced degree from Yale, and is a member of the American Chemical Society, the American Institute of Chemical Engineers, TAPPI, and other organizations. He was formerly a member of the Chemistry Department Faculty at Brown University, and was later associated with the Rogers Fibre Company of Maine, as technical director. From 1930 to the present, he has been Research Director and a member of the firm of Skinner & Sherman, Inc., Consulting Chemists and Engineers, of Boston.

In addition to the general consulting field, Dr. Simons has long been identified with the technology of paper specialties and the treatment of paper for special purposes, together with the related fields of photolithography, inks, and the examination of questioned documents.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, of Pulp and Paper Mills

General Construction News

Detroit, Mich.—The Eddy Paper Corporation, Three Rivers, Mich., manufacturer of folding box board, bristol board and kindred paper stocks, has approved plans for new addition to factory branch, storage and distributing plant at 590 Lycaste avenue, Detroit, to be one-story, estimated to cost close to $45,000, with equipment. General erection contract has been let to the Austin Company, Curtis Building, Detroit, and work will be placed under way at once.

Green Bay, Wis.—The Fort Howard Paper Company, manufacturer of tissue and crepe papers, has awarded general contract to the Selmer Company, Northern Building, Green Bay, for new one-story addition to mill, recently referred to in these columns, and for which superstructure is being placed under way. No estimate of cost has been announced. Harry W. Williams, Northern Building, is architect.

Birmingham, Ala.—The Winter Paper Stock Company, 926 22nd street, general paper products, plans rebuilding of portion of paper-converting, storage and distributing plant, recently destroyed by fire. Loss estimated close to $100,000, including equipment.

Elkhart, Ind.—The Continental Diamond Fibre Company, manufacturer of insulating paper products, fiber specialties, etc., has begun construction of new addition to steam power house at local mill on South Campbell street, for which general contract recently was awarded to the Smith-Nuppanau Company, Elkhart, as previously noted in these columns. Installation will include new boilers, pumps and other equipment, for which awards are being placed. It will cost about $40,000, with equipment. Main offices of company are at Newark, Del.

Gorham, N. H.—Fire recently destroyed a portion of the Cascade Mill of the Brown Company, Gorham, including the barker division of the plant; no estimate of loss has been announced or company's plans for rebuilding. Main offices are at Berlin, N. H.

St. Louis, Mo.—The Keasbey & Mattison Company, Ambler, Pa., manufacturer of asbestos mill board products, asbestos paper goods, etc., is pushing construction of new mill at St. Louis; where site was recently acquired, as previously referred to in these columns. New plant will be one-story, 120 x 675 feet, and is reported to cost close to $500,000, including equipment. It is scheduled to be ready for occupancy during the early part of 1938. General erection contract is being carried out by the United Engineers & Constructors, Inc., 1401 Arch street, Philadelphia, which also prepared plans for plant.

Chicago, Ill.—Mooreboxes, Inc., 33 Carroll street, recently organized with capital of 5,000 shares of stock, no par value, to manufacture paper and other boxes and containers, is said to be arranging for early operation of a local plant. New company is headed by L. T. and W. D. Moore, and is represented by Ira Jacobs, 105 West Adams street, Chicago, attorney.

Jersey City, N. J.—Machinery and equipment of the American Pulp Corporation, 160 Cornelison avenue, was disposed of at a sale in bankruptcy, November 30, to a number of purchasers.

West Springfield, Mass.—The General Fibre Box Company, Circuit avenue, West Springfield, manufacturer of corrugated fiber boxes and containers, has work in progress on two new additions to plant, comprising a one-story shop extension and addition to boiler house, for which general contract recently was awarded to the Fred T. Ley Company, Inc., 1215 Main street, Springfield, and will have units ready for occupancy at early date. Capacity of boiler plant will be increased. Cost estimated over $40,000, including equipment. McClintock & Craig, 458 Bridge street, Springfield, are architects and engineers.

Philadelphia, Pa.—Fire recently damaged a portion of machinery and stock in plant of the Crown Paper Company, occupying a floor in building at 402-10 Brown street, with entire loss, including that to building, reported at close to $25,000. The damage will be replaced.

Spring Grove, Pa.—The P. H. Glatfelter Company, manufacturer of writing, book and other paper stocks, has begun work on new addition to pulp division, recently noted in these columns, to provide for large increased capacity, consisting of a main multi-story unit and smaller structures. General erection contract is being carried out by the H. J. Williams Company, Sumner street, York, Pa. It is proposed to have building ready for occupancy early in 1938. Entire project is reported to cost close to $450,000, including equipment.

Shawinigan Falls, Que.—The Consolidated Paper Corporation, Ltd., Sun Life Building, Mon-

treal, Que., has approved plans for expansion and improvements in newsprint mill at Shawinigan Falls, including new buildings and installation of equipment. An award for structural steel framing has been made to the Dominion Bridge Company, Ltd., Lachine, Que., and for general construction, to J. P. Morin Company, 50 Richlieu street, Cap de La Madeleine, Que. Work will be placed under way at once and is estimated to cost close to $400,000, with equipment. Company also will carry out a similar program at newsprint mill at Three Rivers, Que., including a number of new structures and modernization in present mill units. General erection contract and award for structural steel framing have been made to the same companies noted for this project, with work estimated to cost approximately a like amount. E. B. Wardle, company engineer at mill at Grand Mere, Que., is in charge of projects.

Toronto, Ont.—The Canadian Gypsum Company, Ltd., 1221 Bay street, Toronto, manufacturer of wall board and other building products, has concluded arrangements for purchase of industrial property at Weston road and Oak street, comprising a tract of about four acres of land and a number of buildings, the latter totaling about an acre of floor space, and will occupy for new plant. Structures will be modernized and improved, with installation of equipment; extensions will be made in existing buildings. Entire project is reported to cost close to $100,000, with equipment. Present plant will be removed to new location and large increased capacity carried out. Company is a Canadian subsidiary of the United States Gypsum Company, 300 West Adams street, Chicago, Ill., and operates other mills at Willow Grove and Guelph, Ont., and Hillsboro, N. B.

Hamilton, Ont.—The Consolidated Salesbook and Wax Paper Company, 800 Burlington street, East, manufacturer of commercial paper products, waxed and other processed papers, etc., has plans under way for early rebuilding of portion of plant, recently destroyed by fire, with loss estimated close to $200,000, including equipment. Reconstruction is expected to cost approximately a like amount.

Red Rock, Ont.—The Lake Sulphite Pulp Company, Ltd., 200 St. James street, West, Montreal, Que., has approved plans for new plant unit for production of bleached sulphite pulp at Red Rock, where large tract of land has been selected. It will comprise a main unit, with several smaller buildings, and is estimated to cost about $175,000, with equipment. General erection contract has been let to A. Fleck, Ltd., 416 Wellington street, Ottawa, Ont., and work is scheduled to be placed under way at once. J. Stadler, 1117 St. Catherine street, West, Montreal, is engineer.

New Incorporations

Wilmington, Del.—The Carpenter Paper Company has been chartered under the direction of the Corporation Trust Company, Industrial Trust Building, Wilmington, with capital of $1,150,000, to manufacture and deal in pulp and paper products of various kinds.

New York, N. Y.—The Hanover Paper Corpoation has been incorporated to deal in paper products of various kinds. New company is represented by George L. Cohen, 52 William street, New York, attorney.

Riverside, N. J.—The Riverside Paper Box Company has been incorporated with capital of 200 shares of stock, no par value, to manufacture paper boxes and containers. A local plant will be operated. Charles T. Espenschied, Riverside, is principal incorporator and representative.

Fulton Systems for Puget Sound

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, December 6, 1937.—The Midwest-Fulton Machine Company of Dayton, Ohio, has received a contract to equip two pulp drying machines for the Puget Sound Pulp and Timber Company, Bellingham, Wash., with the Fulton Dryer Drainage System.

This type of pulp drier is comparatively new in the United States, and is known as the Flakt Pulp Drying Machine. In contrast to the usual drier section consisting of cylindrical drier rolls, the Flakt pulp drier consists of a series of special heating coils through which the sheet pulp is carried and dried by air.

The two Fulton Systems for these Flakt driers were especially designed for this type of service, because the heating coils must be completely and constantly relieved of all condensate and air, and the condensate returned to the boiler at the highest possible temperature. These new driers are being installed under the supervision of Cavin, Marshall & Barr, Consulting Industrial Enginers of Bellingham, Wash.

Explosion Kills Man at Waterville

[FROM OUR REGULAR CORRESPONDENT]

WATERVILLE, Me., December 6, 1937 — An explosion of a steamheated roll in the wax department of Hollingsworth & Whitney Company, Tuesday, injured one veteran employee fatally and badly hurt another. They were operating the machine heated by the roll when it exploded.

Joel P. Libby, 51, of Bay street, Winslow, died from a fractured skull several hours after the accident. William Burke, 45, of May street, Waterville, was given slight chance to recover from burns, fractured ribs and collar bone.

Another employee, Charles Mailloux, of Waterville, was knocked down as the blast shook the building, breaking windows and damaging machinery. Sixteen men were in the department at the time, but none of the others suffered serious injury.

An official of the company said an investigation to determine the cause of the explosion failed to disclose its origin. The roll, 12 inches in diameter and six feet long, was shattered by the blast, fragments striking Libby and Burke with the force of shrapnel. Escaping steam caused the burns.

Western Pulp Co. to Build Mill

The Western Pulp and Paper Company, Ltd., according to a press dispatch from Buffalo, will award contracts soon for construction of a pulp and paper mill in Fort William, Ont., to cost more than $5,000,000, with machinery and equipment installations. Goggin & Ripley, Inc., 350 Madison avenue, New York City, are the engineers.

Financial News of Pulp and Paper Industry

Northern Paper Mills Authorized To Sell Its Hydro-Electric Plant for $2,500,000 — Eddy Paper Corp. Net Income for Year Estimated At About $540,000 — A. P. W. Paper Co. Shows Loss for September Quarter.

New York Stock Exchange

High, Low and Last for the Week Ending December 8, 1937

	High	Low	Last
Armstrong Cork Co.	42½	38¾	41⅛
Celotex Corp.	26	25	25
Celotex Corp., pf.	64	63	64
Certain-Teed Products Corp.	9¾	8¾	8¾
Certain-Teed Products Corp., pf.	36¾	32	34⅜
Champion Paper & Fibre Co.	30	28	30
Champion Paper & Fibre Co.	105	103½	104¾
Congoleum-Nairn Co.	25	24	24
Container Corp. of Amer.	14¾	13½	13¾
Continental-Diamond Fibre Co.	8	7⅝	8
Crown-Zellerbach Co.	12⅜	11⅝	12⅛
Crown-Zellerbach Co., pf.	69	67⅜	68
Flintkote Co.	19⅜	17½	18⅝
Robert Gair	5⅛	4⅞	5
International Paper & Power	10¾	9¾	10⅛
International Paper & Power, pf.	43¾	39⅞	42
Johns-Manville Corp.	85	76	84
Johns-Manville Corp., pf.	121½	121	121
Kimberly-Clark Corp.	21	20¼	20¾
MacAndrews & Forbes	31	31	31
Masonite Corp., pf.	34½	32	33
Mead Corp.	14¾	13⅝	13⅝
Mead Corp., pf.	70	61	70
Paraffine Companies, Inc.	41	37	39
Ruberoid Co.	24	21	21
Scott Paper Co.	39¾	37¼	39⅜
Sutherland Paper Co.	21⅓	19½	20½
Union Bag & Paper Corp.	10½	9¼	9¾
United Paperboard Co.	5⅜	5¼	5¼
U. S. Gypsum Co.	72	62	72
U. S. Gypsum Co., pf.	162½	160	162½

New York Curb Exchange

High, Low and Last for the Week Ending December 8, 1937

	High	Low	Last
American Box Board Co.	9¾	9¾	9¾
Brown Co., pf.	33	31	31
St. Regis Paper Co.	3⅞	3½	3⅝
Taggart Corp.	5	4⅛	4¼

To Sell Hydro-Electric Plants

[FROM OUR REGULAR CORRESPONDENT]

MADISON, Wis., December 6, 1937.—An order has been issued by the Wisconsin Public Service Commission authorizing the Northern Paper Mills, Green Bay, Wis., to sell its Chalk Hills and White Rapids hydro-electric plants on the Menominee River near Amberg, Wis., to the Wisconsin Michigan Power Company. The consideration is $2,350,000.

Authority also was given the purchasing company to issue $2,000,000 in 3¾ per cent first mortgage bonds maturing in 1961, and $700,000 in promissory notes. Approval is still forthcoming from the Michigan utility commission and the federal securities and exchange commission, since the dam and power plants extend across the Wisconsin-Michigan line.

Most of the power from the Northern's plants previously had been purchased by the utility. Under the new arangements, Northern Mills will buy whatever power it needs from the Wisconsin Public Service Corporation, which operates a large steam plant at Green Bay. This corporation also has interconnection with the Wisconsin Michigan transmission lines.

Naco Paper Co. to Buy Plant

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., December 6, 1937.—The Naco Paper Company, of Fort Edward, has completed negotiations for the purchase of the former plant of the Standard Textile Company in this city. The paper company is operated under a partnership composed of Samuel Nathan and Walter Cohen and plans are under way for establishing their business at the new site. The structure is now being used for storage purposes by the Imperial Paper and Color Corporation which holds a lease for another year. The plant was constructed before the World War and during the war was used for the manufacture of cotton materials for the government. Among the original officials of the textile concern were Winfield A. Huppuch, prominent paper mill man, and Walter W. Clark, of this city. The Naco Paper Company plans to take possession as soon as the lease expires.

Eddy Paper Earns Good Profit

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 6, 1937.—The Eddy Paper Corporation's 1937 sales and earnings are expected to attain record proportions with net income for the year estimated at around $540,000 and sales at approximately $9,500,000. Estimated earnings are equal to more than $4.20 a share, around 75 per cent ahead of last year. Eddy Paper Corporation was incorporated in Illinois in 1922 and operates one of its plants at Rockford, Illinois. It manufactures paperboard containers and also sells a portion of excess paperboard production to other manufacturers.

Link-Belt Declares Extra Dividend

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 6, 1937.—Directors of the Link-Belt Company this week declared an extra dividend of $1 a share on the common stock payable December 23 on stock of record December 10. The regular quarterly dividend of 50 cents a share on the common was declared payable March 1 on stock of record February 15. The regular $1.62½ quarterly on the preferred was declared payable April 1, 1938, on stock of record March 15.

A. P. W. Paper Co. Shows Net Loss

The report of the A. P. W. Paper Company, Inc., for the quarter ended September 30, 1937, shows net loss of $1,389 after taxes, depreciation, etc. This compares with net profit of $12,238 or eight cents a share on 158,215 shares of common stock in September quarter of previous year. The company's fiscal year ends on June 30.

Hooven & Allison Pay Extra

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, December 3, 1937.—Common stockholders in the Hooven & Allison Cordage Company, Xenia, Ohio, this week received a pre-Christmas gift of an extra cash dividend, amounting to $3 per share. Directors voted the dividend, payable December 1, to all shareholders of record November 24, at a recent meeting.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 8, 1937.—The Government Printing Office has received the following bids for 8,000 pounds (50,000 sheets) of white blotting paper; Reese & Reese, Inc., 5.86 cents; Barton, Duer & Koch Paper Company, 5.89 cents; L. Hyman & Sons, 6.25 cents; Old Dominion Paper Company, 5.889 cents; R. P. Andrews Paper Company, 6.27 cents; Stanford Paper Company, 5.89 cents; Whitaker Paper Company, 5.85 cents; Virginia Paper Company, 5.89 cents; and Enterprise Paper Company, 6.75 cents less 2 per cent.

For 25,350 pounds of 28 x 41 in. 169 lb. dull coated book paper; Enterprise Paper Company, 7.7 cents; John F. Post, Inc., 8.92 cents; Reese & Reese, Inc., 8.29 cents; Barton, Duer & Koch Paper Company, 8.83 cents; R. P. Andrews Paper Company, 7.85 cents; Whitaker Paper Company, 7.85 cents; and Stanford Paper Company, 7.85 cents.

For 580,000 pounds of newsprint paper; National Pulp and Paper Company, 2.5 cents; and Old Dominion Paper Company, 2.525 cents.

For 48,000 pounds (200,000 sheets) of No. 2 kraft wrapping paper; Walker, Goulard, Plehn Company, 4.284 cents; Perkins-Godwin Company, 4.65 cents; W. L. Jones, Inc., 4.39 cents; Paper Corporation of U. S., 4.19 cents; Mathers-Lamm Paper Company, 4.51 cents; Cauthorne Paper Company, 4.42 cents; George W. Millar & Co., 4.5 cents less 2 per cent; Old Dominion Paper Company, 4.655 cents; Equitable Paper Bag Company, 4.23 cents less 2 per cent; Enterprise Paper Company, 4.655 cents; less 2 per cent; Barton, Duer & Koch Paper Company, 4.65 cents; R. P. Andrews Paper Company, 4.42 cents; Stanford Paper Company, 4.65 cents; Graham Paper Company, 4.55 cents; Reese & Reese Inc., 4.19 cents and Whitaker Paper Company, 4.42 cents.

Indianapolis Demand Declines

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 6, 1937.—If there were any doubt concerning a slight business depression among the local paper trade, it was wiped out during the last fortnight. Demand has slumped in practically all lines in spite of the impetus that generally is associated with the pre-holiday season. Buyers are reluctant to place orders and from all indications will remain so at least until after the first of the year. General economic conditions are not alone responsible for the weather has had much to do with slowing business. Weather has not been seasonal at all. For instance in the bag and wrapping paper fields, at this season Christmas buying should have begun and demand for these two items should be increasing steadily. The fact is Christmas buying has not begun and retailers believe it will take some real winter weather during the next week to stimulate it.

The fine paper field, including covers, ledgers and book papers also is being hampered by weather conditions. Local printers say there is a lot of direct by mail work that has been held up because of warm weather and that if it is not started shortly, will be lost entirely. There is some catalog work in prospect and from all indications the volume will be equal to that of last year.

Container manufacturers report a rather indifferent demand. Some of the best customers for the local trade, particularly the hardware, textile and automobile accessory fields are holding off buying, waiting to see what is to happen to business in general. Here, however, the slump has not been felt as badly as in some other fields. A fair demand is reported from the confectionery trade, however.

Kraft has shown the general market trend, but tissues seem to be holding their own. Some satisfaction may be seen in the fact that prices are being maintained on virtually all lines.

Paper stock demand is only ordinary. Mills are buying their immediate requirements and prices show a weakened condition.

Fine Paper Div. Has Luncheon

BOSTON, Mass., December 6, 1937.—A luncheon meeting of the Fine Paper Division of the New England Paper Merchants Association was held Friday at the Boston Chamber of Commerce, with a good attendance. President Frank H. Winter was in the chair. There was a discussion of current market conditions.

After the luncheon, a meeting of the board of directors of the New England Paper Merchants Association was held, at which the Mt. Kilburn Paper Company, Inc., Bellows Falls, Vt., was elected a member. R. A. Switzer is president and general manager of the company.

At a recent meeting of the Cost Finding Committee, the usual subject of cost was discussed, with Harry J. Dowd presiding. Floyd H. Blackman, of the D. F. Munroe Company has become chairman of this group in place of Mr. Dowd, whose resignation was previously reported in these columns.

Micromax Temperature Instruments

A new 32-page illustrated catalog on "Micromax Temperature Instruments For The Steam Plant" is offered to executives, engineers and operating men concerned with steam generation . . . whether in central stations or industrial plants. It shows how temperature measurements help to effect important operating economies. It describes three methods of measurement: (1) the thermocouple pyrometer, used for most steam-plant temperatures; (2) the resistance thermometer, recommended for low temperatures; (3) the optical pyrometer which measures temperatures within the furnace. Lastly, it presents Mircomax indicators, recorders, controllers and accessories usually chosen for steam-plant use.

To receive a copy, ask Leeds & Northrup Company, 4934 Stenton Avenue, Philadelphia, Pa., for Catalog N-33-163.

Harry P. Gould Recuperating

LYONS FALLS, N. Y., December 6, 1937.—Harry P. Gould, president of the Gould Paper Mills, is recuperating from illness at a health resort in Connecticut. He came to the latter place from a New York City hospital and was accompanied by a nurse. He has not been feeling well for some time and the change is expected to prove beneficial to his health. Members of his family in this village spent the past week visiting him and his many friends in this section are hopeful for his early recovery.

Imports of Paper and Paper Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports, of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

NEW YORK IMPORTS

WEEK ENDING DECEMBER 4, 1937
SUMMARY

Cigarette paper .....657 cs.
Wall paper .....2 rolls, 17 bls., 40 cs.
Painted paper.....7 bls.
Newsprint .....7,363 rolls
Printing paper .....86 rolls, 118 cs.
Wrapping paper.....1 roll
Filter mass.....85 bls.
Filter paper.....17 cs.
Bristol boards.....1 cs.
Surface baryta coated paper.....115 cs.
Metal covered paper.....18 cs.
Proto paper.....6 cs. (unsensitized)
Decalcomania paper.....1 cs. (simplex) 26 drums, 14 cs. (duplex)
Decalcomanias .....19 cs.
Transfer paper.....13 cs.
Tissue paper .....29 cs.
Parchment paper.....8 bls., 20 cs.
Paper tubes.....197 cs.
Note book.....9 cs.
Miscellaneous paper.....89 cs.

CIGARETTE PAPER

De Mauduit Paper Corp., *Lafayette,* Havre, 5 cs.
Champagne Paper Corp., *Lafayette,* Havre, 514 cs.
Braustein Freres, Inc., *Lafayette,* Havre, 35 cs.
Max Speigel & Sons Co., Inc., *Pr. Hayes,* Genoa, 103 bls.

WALL PAPER

F. J. Emmerich Co., *American Shipper,* Liverpool, 4 bls.
F. J. Emmerich Co., *Hamburg,* Hamburg, 9 bls., 2 cs.
Globe Shipping Co., *Hamburg,* Hamburg, 2 rolls.
——, *Hamburg,* Bremen, 4 bls., 6 cs.
Titan Shipping Co., *Stavangerfjord,* Oslo, 32 cs.

PAINTED PAPER

F. J. Emmerich Co., *Lafayette,* Havre, 7 bls.

NEWSPRINT

N. Y. Evening Journal, *Markland,* Liverpool, N. S., 649 rolls.
N. Y. Tribune, *Markland,* Liverpool, N. S., 1996 rolls.
World Telegram, *Markland,* Liverpool, N. S., 604 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 104 rolls.
Westchester Newspapers, Inc., *Markland,* Liverpool, N. S., 45 rolls.
N. Y. Post, *Markland,* Liverpool, N. S., 675 rolls.
Sharp Paper & Specialty Co., *Markland,* Liverpool, N. S., 170 rolls.
Parsons & Whittemore, Inc., *Markland,* Liverpool, N. S., 692 rolls.
N. Y. Post, *Tureby,* Port Alfred, Que., 1315 rolls.
——, *Stavangerfjord,* Oslo, 209 rolls.
——, *Stavangerfjord,* Skien, 407 rolls.
Perkins Goodwin & Co., *Hamburg,* Hamburg, 345 rolls.
Jay Madden Corp., *Hamburg,* Hamburg, 152 rolls.

PRINTING PAPER

L. A. Consmiller, *Hamburg,* Bremen, 32 cs.
Dingelstedt & Co., *Hamburg,* Bremen, 86 rolls, 83 cs.
——, *Hamburg,* Hamburg, 3 cs.

WRAPPING PAPER

F. C. Strype, *Black Falcon,* Antwerp, 1 roll.

FILTER MASS

Mager Bros., *Hamburg,* Hamburg, 85 bls.

FILTER PAPER

H. Reeve Angel & Co., Inc., *Andania,* London, 16 cs.
——, *Hamburg,* Hamburg, 1 cs.

BRISTOL BOARDS

The Beek-Ko Co., Inc., *American Traveler,* London, 1 cs.

SURFACE BARYTA COATED PAPER

Globe Shipping Co., *Hamburg,* Bremen, 115 cs.

METAL COVERED PAPER

K. Pauli & Co., *Hamburg,* Bremen, 14 cs.
C. H. Forsman Co., *Hamburg,* Bremen, 4 cs.

PHOTO PAPER

J. J. Gavin Co., Inc., *Queen Mary,* Southampton, 6 cs. (unsensitized)

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *American Shipper,* Liverpool, 1 cs. (simplex)
B. F. Drakenfeld & Co., *American Shipper,* Liverpool, 26 drums, 14 cs. (duplex)

DECALCOMANIAS

I. A. Consmiller, *Hamburg,* Hamburg, 7 cs.
Sellers Transportation Co., *Hamburg,* Hamburg, 12 cs.

TRANSFER PAPER

Fuchs & Lang Manfg. Co., *Hamburg,* Hamburg, 13 cs.

TISSUE PAPER

D. S. Young, *Port Adelaide,* Liverpool, 5 cs.
Atlantic F'd'g Co., *Hamburg,* Hamburg, 24 cs.

PARCHMENT PAPER

International F'd'g Co., *Alex van Opstal,* Antwerp, 9 cs. Colored paper.
C. Asche & Co., *Black Falcon,* Antwerp, 1 cs., 8 bls.
——, *Hamburg,* Hamburg, 10 cs.

PAPER TUBES

——, *Hamburg,* Hamburg, 197 cs.

NOTE BOOKS

Keuffel & Esser Co., *Hamburg,* Hamburg, 9 cs.

MISCELLANEOUS PAPER

W. Bersch, *Black Osprey,* Rotterdam, 1 cs.
International F'd'g Co., *Alex van Opstal,* Antwerp, 7 cs.
National City Bank, *Lafayette,* Havre, 4 cs.
Japan Paper Co., *Pr. Hayes,* Genoa, 1 cs.
——, *Hamburg,* Bremen, 9 cs.
Keuffel & Esser Co., *Hamburg,* Hamburg, 67 cs.

RAGS, BAGGINGS, ETC.

D. S. Stern, *Tonsbergfjord,* London, 32 bls. rags.
Banco Coml. Italiane Trust Co., *Tonsbergfjord,* London, 104 bls. sisal strings.
Keene, Inc., *Indep. Hall,* Dunkirk, 66 bls. rags.
Darmstadt Scott & Courtney, *Indep. Hall,* Havre, 88 bls. bagging.
Keene, Inc., *Indep. Hall,* Dunkirk, 66 bls. rags.
Great Eastern Packing & Paperstock Corp., *Indep. Hall,* Dunkirk, 154 bls. sisal waste.
Banco Coml. Italiane Trust Co., *Exchange,* Piraeus, 285 bls. rags, 72 bls. bagging.
Irving Trust Co., *Andania,* London, 40 bls. rags.
Irving Trust Co., *American Shipper,* Manchester, 38 bls. paper stock.
Chase National Bank, *American Shipper,* Manchester, 62 bls. paper stock.
M. Snedeker Corp., *American Shipper,* Belfast, 40 bls. rags.
O'Brien Padawer Co., *Norfolk Maru,* Bombay, 100 bls. cotton waste.
Darmstadt Scott & Courtney, *Norfolk Maru,* Bombay, 132 bls. rags.

Irving Trust Co., *Norfolk Maru,* Bombay, 150 bls. rags.
Burka Bagging Co., Inc., *Fort Townshend,* Halifax, 110 bls. bagging.
Sheffler Mdse. Co., *Black Falcon,* Antwerp, 15 bls. cotton waste.
Loumar Textile By Products, *Black Falcon,* Antwerp, 96 bls. bagging.
Philadelphia National Bank, Gerolstein, Antwerp, 101 bls. rags.
E. J. Keller Co. Inc., *Alberta,* ———, 54 bls. paper stock.

OLD ROPE

Banco Coml. Italiane Trust Co., *Tonsbergfjord,* London, 43 coils.
D. Benedetto, Inc., *Indep. Hall,* Havre, 50 bls.
Chase National Bank, *American Trader,* London, 55 coils.
———, *American Trader,* London, 53 bls.
W. Steck & Co., *Black Falcon,* Rotterdam, 59 coils.

CHINA CLAY

Whitaker Clark & Daniels, *American Shipper,* Liverpool, 260 bags.

WOOD PULP

Bankers Trust Co., *Alberta,* Trieste, 986 bls. wood pulp.
Chase National Bank, *Stavangerfjord,* Oslo, 420 bls. sulphite.
Irving Trust Co., *Stavangerfjord,* Oslo, 250 bls. chemical pulp.
The Borregaard Co., Inc., *Stavangerfjord,* Sarpsborg, 1008 bls. sulphate.
Gottesman & Co., Inc., *Korsholm,* Sweden, 9520 bls. sulphite.

WOOD PULP SHEETS

Flexidal Dry Mat Co., *Hamburg,* Hamburg, 54 bls.

PORTLAND IMPORTS

WEEK ENDING DECEMBER 4, 1937

Price & Pierce, Ltd., *Wanja,* ———, 3000 bls. unbleached sulphate.
Price & Pierce, Ltd., *Wanja,* ———, 2064 bls. unbleached sulphite.

BOSTON IMPORTS

WEEK ENDING DECEMBER 4, 1937

E. J. Keller Co., Inc., *Black Falcon,* ———, 40 bls. bagging.

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 4, 1937

Philadelphia National Bank, *City of Flint,* Hamburg, 64 bls. rags.
Philadelphia National Bank, *City of Flint,* Hamburg, 1261 bls. wood pulp, 195 tons.
Castle & Overton, Inc., *City of Flint,* Hamburg, 1500 bls. wood pulp, 300 tons.
J. Walwarth & Son, *City of Flint,* Dundee, 38 bls. paper stock.
———, *City of Flint,* Leith, 62 coils old rope.
E. J. Keller Co., Inc., *Indep. Hall,* ———, 260 bls. rags.
Castle & Overton, Inc., *Indep. Hall,* Havre, 215 bls. rags.
Castle & Overton, Inc., *Black Osprey,* Rotterdam, 87 bls. rags.
E. J. Keller Co., Inc., *Black Osprey,* ———, 196 bls. rags.
———, *Black Osprey,* Antwerp, 35 bls. hemp waste.
W. F. Sherwood, & Son, *Black Osprey,* Antwerp, 384 bls. rags.
Gottesman & Co., Inc., *Brosund,* Sweden, 3000 bls. sulphate.
Price & Pierce, Ltd., *Brosund,* ———, 900 bls. unbleached mechanical pulp.
Price & Pierce, Ltd., *Brosund,* ———, 150 bls. unbleached sulphite.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 4, 1937

Gottesman & Co., Inc., *Brosund,* Sweden, 1410 bls. sulphate.
Gottesman & Co., Inc., *Brosund,* Sweden, 4230 bls. sulphite.
Pagel Horton & Co., Inc., *Brosund,* Sweden, 5720 bls. wood pulp.
Price & Pierce, Ltd., *Brosund,* ———, 750 bls. unbleached sulphite.
Price & Pierce, Ltd., *Toledo,* ———, 450 bls. bleached sulphite.

NORFOLK IMPORTS

WEEK ENDING DECEMBER 4, 1937

———, *Norfolk Maru,* Bombay, 77 bls. rags.

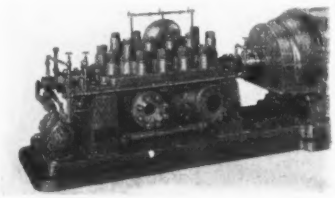
NEW ORLEANS IMPORTS

WEEK ENDING DECEMBER 4, 1937

Irving Trust Co., *Norfolk Maru,* Bombay, 230 coils old rope.

"Doubleton" Pump

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has recently introduced an improved design of multi-stage pump into the High Pressure Boiler Feed Pump field. This pump is called the "Doubleton" type because of the use of double suction impellers, and the double balance of the rotating element. The double suction impellers provide axial balance and the positions of the successive volute passages which surround each impeller are made so as to largely equalize unbalanced radial forces on the impellers. These pumps are made with horizontally split casings for pressures 1500 lbs. and above. The design and bolting has been so worked out, based on the Company's experience with bolting high pressure, high temperature steam turbine casings, that no difficulty is experienced in maintaining a tight joint and retaining the advantages of the split casing construction. This pump is also suitable for high pressure applications other than boiler feed service such as "Descaling" pumps in steel mills, oil pipe line pumps, etc.



Mechanical Pulp Suppliers Continue

WASHINGTON, D. C., December 11, 1937—The organization known as Mechanical Pulp Suppliers and embracing wet mechanical wood pulp producers in Sweden, Norway and Finland, recently held a meeting in Stockholm at which it was decided to continue the existing agreement in effect, under unchanged principles, for another three years after the expiration of the present agreement which runs until the end of 1938, according to a report from the office of the American Commercial Attache in Stockholm. The present decision, taken at such a considerable time in advance of the termination of the existing agreement, sets at rest the rumors which have been current in recent months to the effect that MPS might break up.

It is reported, though unconfirmed, that the existing aggregate basic export quotas of the three participating countries, which amount to 1,750,000 metric tons per annum, may be raised in 1939 to 1,780,000 metric tons.

S. D. Warren Declares 75 Cents

The S. D. Warren Company ordered a common dividend of 75 cents, payable December 27 to holders of record December 18, bringing payments for the year to $2.75 a share.

J. Andersen & Co.

Selling Agents

21 East 40th Street

New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp

BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaförden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NENSJÖ CELLULOSA A.-B.
Sprängsvikен, Sweden

Unbleached Sulphite

AKTIESELSKABET GREAKER CELLULOSEFABRIK
Greaker, Norway
BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakei
SVANÖ AKTIEBOLAG
Svanö, Sweden

Bleached Sulphite

KELLNER-PARTINGTON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
Hallein & Villach, Austria

EVERY WEEK—

The Paper Trade Journal publishes the happenings of interest in the Pulp and Paper Industry—Covers it completely is saying it a little clearer.

To reach buyers in this field, advertising in these columns can carry your message to many that are interested in your products.

As a member of the Audit Bureau of Circulations our circulation claims are not only authentic but provable.

The Paper Trade Journal

15 West 47th St. New York

Knox Felts

EXCELSIOR Knox Woolen Co. Camden, Me. FELTS & JACKETS

HIGH POROSITY

. . . as a characteristic of a paper maker's felt will, not only add to the life of felt, but saves time lost on the machine due to excessive shut downs for washing. Specify

EXCELSIOR FELTS

and minimize this trouble. Made by the Knox Woolen Co., of Camden, Maine, since 1864.

BULKLEY, DUNTON & CO.

295 Madison Ave. New York, N. Y.

CAledonia-5 5260-68

ENGLISH ECCO CLAYS TRADE MARK **CLAYS**

UNIFORM • SUPERIOR • DEPENDABLE

English China Clays Sales Corporation
551 Fifth Avenue, New York City

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL
Wednesday, December 8, 1937.

The wholesale paper market reports demand for nearly all grades of paper as slightly less for the week. Prices on the whole remain firm and the market is relatively steady, though the trend in consumer demand still continues downward. As the volume of business has now declined to so low a level, some price cutting is reported but these cases are few and less frequent than might be expected today when very little substantial buying is being done.

Inventories of jobbers are reported to be low and most buyers in the wholesale market are placing minimum orders for prompt deliveries. The opinion has been frequently expressed in the trade that the market is "scraping bottom" but with the trend continuing downward little improvement is expected in the immediate future.

The demand for newsprint is active and shipments under contract are moving in normal volume.

The demand for book paper is slightly under that of last week. The tissue paper market reports demand as very light, prices relatively firm and few instances of price cutting. The demand for kraft papers is also light, with prices well maintained. The box board market is very quiet, with only a moderate decline in some grades of board reported for the current week.

Chemical Pulp

The trend in demand in the chemical pulp market is reported as continuing downward. Prices on most grades are lower than the level of last week.

Mechanical Pulp

The demand for mechanical pulp is relatively light. Prices remain firm and are unchanged from prevailing quotations.

Old Rope and Bagging

Trading in the old rope market is quiet. Prices continue at about the same level as the preceding week. The demand for bagging is reported as light and prices are unchanged.

Rags

The demand in the domestic market is reported as practically stagnant. Prices are unchanged from last week's listings. The foreign market in both old and new rags is brisker.

Waste Paper

The waste paper market is quiet, with the exception of the foreign grades which are more active. Prices remain unchanged.

Twine

The twine market is quiet. Prices remain at the level of the preceding week.

Industrial Chemistry

The third edition of Industrial Chemistry by Emil R. Riegel, Professor of Industrial Chemistry, University of Buffalo, has just been published by the Reinhold Publishing Company. It is an 850-page volume, prepared as an elementary treatise for the student and general reader.

Included in the up to date presentation of the story of the process industries are two dealing with cellulose from wood and cotton, one of these relates to pulp and paper manufacture and the other to rayon, vulcanized fiber, cellulose sponges, etc.

Some chapters deal with chemical engineering equipment such as pumps, fans, blowers, filters, evaporators, driers, materials handling equipment and materials of construction as well as the various control instruments generally used.

In the chapter on pulp and paper, the author draws freely on current articles by TAPPI members such as C. W. Boyce, G. A. Richter, R. M. Boehm, E. C. Lathrop, R. H. Stevens, C. C. Heritage and H. R. Murdock. This chapter is necessarily brief but gives a general idea of the processes involved. Individuals in the paper industry will be more interested in the chapters on other industries, many of which are becoming closely allied to the alkaline pulping industries.

This book may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 E. 42nd street, New York, at $5.75 per copy.

Harry Tweed with Middlesex Products

[FROM OUR REGULAR CORRESPONDENT]

CAMBRIDGE, Mass., December 6, 1937 — The Middlesex Products Company, manufacturer of glazed and coated papers, announces that Harry Tweed, formerly with the home office, will represent the company in the South and Pennsylvania, in charge of the company's office at 401 North Broad street, Philadelphia.

Cornelius Dieter, formerly assistant purchasing agent for the Dickerman Box Company here, has become associated with the Middlesex Products Company at the Cambridge office.

Alexander Thomson Heads Chamber

DAYTON, Ohio, December 6, 1937.—Alexander Thomson, chairman of the board of the Champion Paper and Fibre company, Hamilton, Ohio, was re-elected president of the Ohio Chamber of Commerce for his fourth term, at a meeting of the state Chamber directors in Columbus, Monday. He began his first term as state president, February 1, 1934.

Mr. Thomson also is president of the Hamilton Chamber of Commerce and a director of the United States Chamber of Commerce.

TRAYLOR

KILNS, COOLERS, DRYERS, SCRUBBERS, SLAKERS

Are used by many of the greatest chemical and process industries—a fact that paper manufacturers cannot afford to overlook.

Write us for details—No obligation!

TRAYLOR ENGINEERING & MFG. CO.
ALLENTOWN, PENNSYLVANIA, U. S. A.

NEW YORK CITY 1916 Empire State Bldg. | CHICAGO 2151 One LaSalle St. Bldg. | SALT LAKE CITY 101 West Second South St
LOS ANGELES 919 Chester Williams Bldg. | SEATTLE 5311 22nd Ave., N. E.

RAG CUTTERS

TAYLOR, STILES & COMPANY
TRADE MARK
GIANT
REG. U.S. PAT. OFF.
RIEGELSVILLE, N.J. U.S.A.

CHOPPERS - SHREDDERS

FACTS YOU SHOULD KNOW
about "Buffalo"

PAPER STOCK PUMPS

are in this book... write for it

BUFFALO PUMPS, INC.
443 BROADWAY - BUFFALO, N. Y.
Branch Engineering Offices in Principal Cities | In Canada: Canada Pumps Ltd., Kitchener, Ont.

TRIMBEY MACHINE WORKS

GLENS FALLS, N. Y.

Manufacturers of

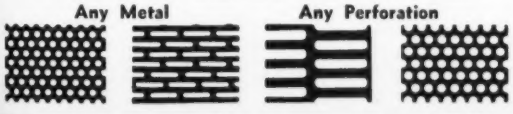
WEIGHT REGULATORS
CONSISTENCY REGULATORS
PROPORTIONING AND METERING SYSTEMS
PULP SCREENS—FLOAT VALVES

CASEIN

Uniform Quality
Dependable Service
Special Types to Meet Unusual Requirements

CASEIN COMPANY OF AMERICA, INC.
350 Madison Avenue, New York, N. Y.
Oldest and Largest Producers of Casein in America

Pulp and Paper Mill Screens
Of Stainless Steel—Copper—Bronze—Monel—Chemical Resisting Alloys
Perforations that are accurate in size
Any Metal | Any Perforation



The Harrington & King PERFORATING Co.
5652 FILLMORE ST., CHICAGO, ILL. 114 LIBERTY ST., NEW YORK, N.Y.

THE OLD PAPER MAKER SAYS...

"You're sure of trouble-free, dependable operation with CINCINNATI Rubber Roll Covers."

THE CINCINNATI RUBBER MFG. CO.
CINCINNATI, OHIO

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, December 8, 1937.

BLANC FIXE—The market for blanc fixe is unchanged for the current week. Prices are firm and continue at previously quoted levels. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder at from 3½ to 3¾ cents per pund, in barrels, at works.

BLEACHING POWDER—The bleaching powder market is reported as steady. Prices are firm and comply with the preceding week's quotations. Bleaching powder is offered at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The demand for casein is reported as fair. Domestic standard ground casein is quoted at from 12 to 12½ cents per pound; domestic finely ground casein at 13 cents per pound; all in bags, car lot quantities.

CAUSTIC SODA—The caustic soda market continues at about the same level as last week. Prices are firm. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The demand for china clay is about on the level of the preceding week. Prices are unchanged. Imported clay is quoted at from $14.50 to $25 per ton, ship side. Domestic filler clay is offered at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines.

CHLORINE—The chlorine market continues steady. Prices are firm and are unchanged from the quotations of last week. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The demand for rosin continues fair. Prices of some grades are slightly lower for the week. Paper making rosin is quoted at $5.79; wood-rosin at $6.00 per 280 pounds, gross weight, in barrels at Savannah. Seventy per cent rosin size is quoted at $2.99 per 100 pounds, in tank cars, f.o.b., shipping point.

SALT CAKE—The salt cake market reports prices as firm, with little or no domestic salt cake available. Quotations range from $12 to $13.50 per ton; chrome salt cake from $11 to $12 f.o.b., shipping point. Imported salt cake is offered at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—The demand for soda ash continues about on the level of last week. Prices are firm. Quotations on soda ash in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The demand for starch is reported as fair. Prices for the current week are slightly lower. Globe pearl is now offered at $2.60 per 100 pounds, in bags, and at $2.85 in barrels. Special paper starch is quoted at $2.70 per 100 pounds, in bags, and at $2.95 in barrels; all prices in car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—The sulphate of alumina market remains unchanged for the week. Prices are firm. The commercial grades are quoted at from $1.25 to $1.60; iron free at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The demand for sulphur is reported as steady. Prices are firm. Annual contracts are quoted at $18 per long ton, f.o.b., cars at mines. Spot and nearby car lots are offered at $21 per ton.

TALC—The talc market reports prices as firm and unchanged from the quotations of last week. Domestic talk is quoted at from $15 to $18 per ton, Eastern mines. Imported talc is offered at from $25 to $40 per ton, on dock.

Market Quotations

Paper

(Delivered New York)

News, per ton—		
Roll, contract	42.50	@ —
Sheets	47.50	@ —
Boards, per ton—		
News	35.00	@37.50
Chip	35.00	@37.50
Sgl. Mla. Ll. Chip	52.50	@ —
Jute Lined Chip	52.50	@ —
White Pat. Coated	65.00	@67.50
Kraft Liners	55.00	@ —
Binders Boards	75.00	@80.00

The following are representative of distributors' resale prices.—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$41.40@$48.50	$42.55@$50.00
100% Rag	32.80@ 38.50	33.95@ 39.75
85% Rag	.....	32.20@ 37.75
75% Rag	24.75@ 29.00	25.90@ 30.50
65% Rag	21.65@ 26.25	22.80@ 27.75
50% Rag	18.70@ 22.75	19.90@ 24.25
25% Rag	15.80@ 19.25	16.95@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35@$11.50	$10.55@$12.75
No. 2	8.50@ 10.25	9.65@ 11.75
No. 4	7.60@ 9.25	8.80@ 10.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.15@$14.25
No. 2 Glossy Coated	10.55@ 12.25
No. 3 Glossy Coated	9.35@ 11.00
No. 4 Glossy Coated	8.80@ 10.50
No. 1 Antique (watermarked)	8.80@ 10.50
No. 2 Offset	8.05@ 9.50
A Grade E. F.	7.90@ 9.50
A Grade S. & S. C.	8.15@ 9.75
B Grade E. F.	7.30@ 8.75
B Grade S. & S. C.	7.55@ 9.00
C Grade E. F.	7.00@ 8.50
C Grade S. & S. C.	7.25@ 8.75
D Grade E. F.	6.75@ 8.25
D Grade S. & S. C.	7.00@ 8.50

Ivory & India at $.50 cwt. extra.

Kraft—per cwt.		
Standard Northern	$5.75	@$7.40
Standard Southern	5.50	@ 7.10
Sulphite, per cwt.		
50 lb. Steam Finish	$4.75	@$5.85
Paper Towels, per case		
32 lb. Junior, unbleached	$2.65	@$3.35
32 lb. Senior, unbleached	3.20	@ 3.90
Wrapping Tissue, 24x36—480, per ream		
No. 1 White	$1.10	@$1.50
No. 1½ White	1.00	@ 1.40
No. 2 White	.70	@ 1.00
Manila	.70	@ 1.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	35.00	@36.00
Dry	40.00	@42.00

(Delivered)

No. 1 Domestic and Canadian	36.00	@37.50

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—		
Prime Bleached Sulphite	3.50	@ 4.65
Prime Qualities—		
Easy-Bleaching Sulphite	3.00	@ 3.75
Strong Unbleached Sulphite	2.50	@ 3.50

(On Dock, Atlantic Ports)

Kraft Bleached	4.00	@ 4.50
Kraft Light & Strong	3.00	@ 3.50
Kraft No. 1	2.50	@ 3.25
Kraft No. 2	2.25	@ 2.50

(F.o.b. Pulp Mill)

Kraft Domestic	2.00	@ 2.50

(Delivered)

Soda Bleached	3.25	@ —

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	7.50	@ 7.75
Silesias, No. 1	5.25	@ 5.75
New Unbleached	7.50	@ 8.00
Blue Overall	6.25	@ 6.50
Fancy	2.75	@ 3.00
Washables	2.25	@ 2.50
Mixed Khaki Cuttings	3.75	@ 4.00
O. D. Khaki Cuttings	4.25	@ 4.35

Old Rags

White, No. 1—		
Repacked	3.50	@ 3.60
Miscellaneous	2.75	@ 3.00
White, No. 2—		
Repacked	2.25	@ 2.50
Miscellaneous	2.00	@ 2.25
Thirds and Blues—		
Repacked	1.50	@ 1.75
Miscellaneous	1.25	@ 1.50
Roofing Rags—		
No. 1	1.30	@ 1.40
No. 2	.75	@ .80
No. 3 (bagging)	.70	@ .80
No. 4	.70	@ .80
No. 5A	.65	@ .70

Foreign Rags

New Rags

New Dark Cuttings	2.25	@ 2.40
New Mixed Cuttings	2.00	@ 2.30
New Light Silesias	5.50	@ 5.75
Light Flannelettes	5.50	@ 5.75
New White Cuttings	7.00	@ 7.50
New Light Oxford	4.00	@ 4.50
New Light Prints	3.00	@ 3.25

Old Rags

No. 1 White Linens	7.50	@ 8.50
No. 2 White Linens	6.50	@ 7.50
No. 3 White Linens	4.50	@ 5.50

GEORGE F. HARDY

Consulting Engineer

305-309 Broadway, New York City, N. Y.

Member—Am. Soc. C.E.—Am. Soc. M.E.—Eng. Inst. Can.

Consultation	Paper and Pulp Mills
Reports	Hydro-Electric and
Valuations	Steam Power Plants
Estimates	Plans and Specifications

HARDY S. FERGUSON & CO.

Consulting Engineers

200 FIFTH AVENUE, NEW YORK CITY

Hardy S. Ferguson ..... Member A.S.C.E., A.S.M.E., E. I. C.
Moses H. Teare ..... Member A.S.M.E., E. I. C., A.S.C.E.

Consultation, reports, valuations, and complete designs and engineering supervision for the construction and equipment of

Pulp and Paper Mills and other Industrial Plants
Steam and Hydro-Electric Power Plants
Dams and Other Hydraulic Structures

THE RUST ENGINEERING CO.

Engineers and Constructors

NEW YORK • PITTSBURGH • WASHINGTON • BIRMINGHAM

Builders of

COMPLETE PULP AND PAPER MILLS
ALL KINDS OF INDUSTRIAL CONSTRUCTION

Arthur D. Little, Inc.

CHEMISTS AND ENGINEERS TO THE PULP AND PAPER INDUSTRY FOR OVER FIFTY YEARS

Laboratories and Experimental Mill

30 CHARLES RIVER ROAD, CAMBRIDGE, MASS.

J. E. SIRRINE & COMPANY

Engineers

Appraisals; Consultation; Design; Estimates; Hydro-Electric and Steam Power Plants; Paper and Pulp Mills; Water; Waste Disposal; Plans, Specifications and Supervision; Steam Utilization.

GREENVILLE SOUTH CAROLINA

H. M. SPAIN & CO.

TIMBER ESTIMATES AND APPRAISALS
PULPWOOD SURVEYS

MEMPHIS, TENN.

"YOUR PAPER IS MADE IN YOUR BEATERS"

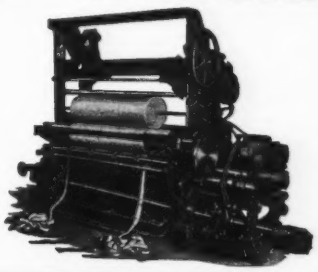
Dilts

MACHINE WORKS Inc. FULTON, N.Y.

LANGSTON SLITTERS AND ROLL WINDERS

help reduce upkeep and labor costs in mill, finishing room or paper converting plant. Samuel M. Langston Company, Camden, N. J.

SHEAR CUT
CLEAN CUT



Appleton Wires

are good wires

APPLETON WIRE WORKS INC., APPLETON, WIS.

Pulpers and Refiners
Double-Disc Action

THE BAUER BROS. COMPANY.
Box 509-T
Springfield, Ohio

DRYER FELTS

MT. VERNON-WOODBERRY MILLS, INC.
TURNER HALSEY COMPANY
Selling Agents
NEW YORK CITY
40 WORTH STREET
Branch Offices: SAN FRANCISCO • NEW ORLEANS • CHICAGO • BOSTON • BALTIMORE
MT. VERNON EXTRA RICHLAND TRIPLEX

NASH PUMPS FOR PAPER MILLS

VACUUM PUMPS
DRYER EXHAUST PUMPS
DRYER DRAINAGE PUMPS
RETURN LINE HEATING PUMPS
CONDENSATION PUMPS

NASH ENGINEERING CO., SO. NORWALK, CONN.

SWENSON

EVAPORATORS & FILTERS for Pulp Mills
SWENSON EVAPORATOR COMPANY
15687 Lathrop Avenue
Harvey (Chicago Suburb), Ill.

WIENER REFINERS

STOCK REGULATING VALVES
ENGINEERING AND DEVELOPING
WIENER REFINER ENGINEERING CO.
OSWEGO, NEW YORK

No. 4 White Linens	2.25	@	3.25
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	3.00
No. 4 White Cotton	1.90	@	2.20
Extra Light Prints	2.00	@	2.40
Ord. Light Prints	1.75	@	2.15
Med. Light Prints	1.55	@	1.95
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.00	@	—
Checks and Blues	2.00	@	—
Linsey Garments	2.00	@	2.10
Dark Cottons	1.60	@	1.70
Old Shopperies	1.45	@	—
New Shopperies	1.45	@	—
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.15	@	2.35
Wool Tares, light	1.50	@	1.75
Wool Tares, heavy	2.00	@	2.10
Bright Bagging	1.60	@	1.70
Manila Rope—			
Foreign	3.25	@	3.50
Domestic	3.50	@	3.75
Jute Threads	2.75	@	3.00
Sisal Strings	2.35	@	2.45
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	1.90	@	2.00
Soft White No. 1	2.15	@	2.25
Flat Stock—			
Stitchless	.75	@	.85
Overissue Mag	.75	@	.85
Solid Flat Book	.55	@	.60
Crumbled No. 1	.40	@	.45
Ledger Stock	1.00	@	1.10
New B. B. Chips	.25	@	.30
Manila—			
New Env. Cut	1.85	@	2.00
New Cuttings	1.50	@	1.60
Old Kraft Machine—			
Compressed bales	.70	@	.75
News—			
No. 1 White News	1.10	@	1.20
Strictly Overissue	.45	@	.50
Strictly Folded	.27½	@	.30
No. 1 Mixed Paper	.15	@	.20

Twines

(F. o. b. Mill)

(Soft Fibre)			
Coarse Polished—			
India	.15	@	.16½
White Hemp	.16	@	.17½
Fine Polished—			
Fine India	.20	@	.22
Unpolished—			
Box	.11	@	.11½
Paper Makers	.11	@	.12¾
Tube Rope	.11½	@	.14¼
Wall Paper	.12½	@	.13¾
Wrapping	.14	@	.14½
Soft Fiber Rope	.13¾	@	.14¼
Cotton	.17	@	.21
(Hard Fibre)			
Medium Java	.12	@	.12½
Mex. Sisal	.11	@	.11½
Manila	.21	@	.28
Domestic	3.00	@	3.25
Transmission Rope	1.75	@	1.90
Soft Jute Ropes	1.90	@	2.00
Jute Carpet Threads	1.40	@	1.60
Gunny No. 1			
Foreign	2.25	@	2.35
Domestic	1.80	@	2.00
Bleachery Burlap	3.75	@	4.00
Scrap Burlap			
Foreign	1.80	@	1.90
Domestic	1.60	@	1.80
Scrap Sisal	1.90	@	2.00
Scrap Sisal for Shredding	2.25	@	2.50
Wool Tares, Heavy	2.00	@	2.05
New Burlap Cuttings	2.45	@	3.00
Aust. Wool Pouches	3.25	@	3.50
Heavy baling bagging	2.15	@	2.25
Paper Mill Bagging	1.50	@	1.60
Bagging No. 2	.85	@	1.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03	@	.03¼
New White No. 1	.07½	@	.07¾
New White No. 2	.05½	@	.05¾
New Light Flannelettes	—	@	.06
Silesias No. 1	.05½	@	.06
New Black Silesias	.03¾	@	.04
Silesias No. 1			
Soft Unbleached	.08	@	.08¼
Blue Cheviot	.06¾	@	.07
Fancy	.03¼	@	.03½
Washable	.03	@	.03¼
Cottons—According to grades—			
Blue Overalls	.06½	@	.06¾
New Black soft	.03¾	@	.04
Khaki Cuttings	.03½	@	.04
O. D. Khaki	.04	@	.04½
Corduroy	.02¾	@	.03
New Canvas	.07¼	@	.07¾
B. V. D. Cuttings	.08¼	@	.08¾

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock			
No. 1	1.15	@	1.20
No. 2	.95	@	1.00
No. 3	.85	@	.90

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.30	@	1.40
Dutch Blues	2.85	@	3.00
New Checks and Blues	2.85	@	3.00
Old Fustians	2.50	@	2.60
Old Linsey Garments	1.90	@	2.00
New Silesias	6.00	@	6.50

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.07	@	.07½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	—	@	.05½
Black Silesias, soft	.03	@	.03½
New Unbleached	.07	@	.07½
Washable, No. 1	.02	@	.02¾
Blue Overall	.04	@	.04½
Cottons—According to grades—			
Washable, No. 2	.01½	@	.01¾
New Blue	.01¼	@	.01½
Fancy Percales	—	@	.03½
New Black Soft	.03	@	.03½
New Light Seconds	—	@	.05½
New Dark Seconds	1.00	@	1.25
Khaki Cuttings—			
No. 1 O. D.	.03½	@	.04
No. 2 Mixed	—	@	.02¾
Corduroy	.02½	@	.02¾
New Canvas	.06	@	.06½
New Black Mixed	.02	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.25
Miscellaneous	2.75	@	3.00
Thirds and Blues—			
Miscellaneous	1.25	@	1.50
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Roofing Stock—			
Foreign No. 1	—	@	1.25
Domestic No. 1	—	@	1.25
Domestic No. 2	1.00	@	1.10
Roofing Bagging	.80	@	.90

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	1.75	@	—
Domestic	1.70	@	1.75
Manila Rope	3.00	@	3.25
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap—			
No. 1	1.50	@	—
No. 2	1.00	@	1.25
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.35	@	2.40
No. 2 Hard White	2.00	@	2.10
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.40	@	1.50
No. 1 Mixed	.70	@	.75
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.25	@	1.30
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.85	@	.90
Manila Cuttings	1.50	@	1.75
Print Manila	.45	@	.50
Container Manila	—	@	.40
Kraft Paper	.90	@	.95
No. 1 Mixed Paper	.25	@	.30
Straw Board Chip	.25	@	.30
Binders Board Chip	.25	@	.30
Corrugated Board	.50	@	.55
Overissue News	.55	@	.60
Old Newspapers	.30	@	.35

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.25	@	2.40
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.70	@	.80
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Envelope Cuttings, extra quality	2.00	@	2.15
No. 1 Old Manila	.85	@	.95
White Blank News	1.30	@	1.40
No. 1 Kraft	.90	@	1.15
Mixed Papers	.12½	@	.15
Print Manila	.45	@	.50
Container Manilas	.27½	@	—
Old Newspapers	.20	@	.25
Paper Wool Strings	—	@	.60
Overissue News	.45	@	.50
Box Board Chips	.35	@	.40
Corrugated Boxes	.25	@	.27½
Kraft corrugated boxes	.55	@	.80
Screenings wrappers	.45	@	.50

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.50	@	3.00

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	3.15	@	3.25
No. 1 Hard White	2.50	@	2.60
No. 1 Soft White	2.05	@	2.10
Ledger & Writings	1.30	@	1.40
Solid Books	1.20	@	1.25
Blanks	1.40	@	1.50
Krafts	.90	@	1.00
New Kraft Cuts	1.70	@	1.80
Manila Env. Cuts	2.15	@	2.25
Ex. No. 1 Manila	2.15	@	2.25
Print Manila	1.70	@	1.80
Overissue News	.60	@	.70
Old Newspapers—			
No. 1 Folded News	.45	@	.50
No. 1 Mixed Paper	.35	@	.40
Roofing Stocks—			
No. 1	2.00	@	2.25
No. 2	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	—	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White	11.35	@	—
No. 5 Bond—Tints	12.35	@	—
No. 5 Bond—Golden Rod	13.35	@	—
No. 5 Ledger—White	.1185	@	—
No. 5 Ledger—Tints	.1285	@	—
No. 6 Bond—White	10.75	@	—
No. 6 Bond—Tints	11.25	@	—
No. 6 Bond—Golden Rod	12.75	@	—
No. 7 Bond—White	9.10	@	—
No. 7 Bond—Tints	9.60	@	—
No. 7 Bond—Golden Rod	11.10	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.20
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.10	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.00	@	—
No. 3 Coated and Litho	9.50	@	10.00
Coated tinted	13.00	@	13.50
Wrapping—delivered—			
Rag Brown	4.85	@	5.55
White Wrap	4.00	@	—
"B" Manila	4.90	@	6.25
No. 1 Manila	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2	5.50	@	—

(F. o. b. Cars, Toronto)

News, per ton—			
Rolls (contract)	38.50	@	—
Sheets	45.50	@	—

Pulp

Ground wood	32.00	@	—
Unbleached Sulphite	59.00	@	—
Book (Class 1)	71.00	@	—
Writing (Class 2)	72.00	@	—
Select (Class 3)	73.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.15	@	—
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.65	@	—
Kraft	1.00	@	1.70
News and Scrap—			
Strictly Overissue	.65	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09	@	.09¼
Fancy Shirt Cuttings	.03½	@	.03¾